COLUMBIA UNIVERSITY QUARTERLY

VOL. XII — DECEMBER, 1909 — No. 1

STANDARDS OF SUCCESS*

NOT long ago a distinguished lawyer of the Middle West, pleading the cause of one of the societies for improving civic conditions, risked the assertion that the higher life of the American people "had been drugged with a spirit of mercenary materialism," and that "political self-seeking and unlimited corporate greed have become a national religion," while material aggrandizement is "leading us in the direction of national decay." Although this charge is overdrawn and is likely to be thrown out by the grand jury of enlightened public opinion, there is conviction in his later statement that mere material prosperity is what is too commonly known as "success in life," whereas "in reality it is failure," for "it confounds the end with the means," since we have reached only "the portals of success when we have become wealthy and influential. Our culture is more or less shallow, and our lives are more or less limited and crippled, unless we are patriotic and unselfish. We are like plants which put forth the buds of promise but never reach the blossoming stage."

It may be admitted, at once, that in the mouth of the ordinary American of today the word success is usually interpreted to mean material prosperity, the attainment of a comfortable fortune, the acquisition of the assured position which money generally gives.

* Address delivered at the opening exercises of the 156th academic year, September 22, 1909. Reprinted from *The Forum,* October, 1909.

But when we ask whether this interpretation is either strikingly American or strikingly novel, we are likely to come to the conclusion that it is neither, and that ever since our modern civilization emerged out of the Dark Ages, there has never been a time or a place when the average man found any other meaning in the word. To the large majority of mankind always and everywhere the outward and visible proof of success is "money in the bank,"—or whatever might be the immediate equivalent of this.

Indeed, this must needs endure so long as most men have to spend their lives battling with the waves in the strenuous effort to keep themselves afloat. To measure success in terms of material prosperity may be sordid and it may be dangerous to the commonwealth; but it is natural enough and it marks no sudden fall from grace. Even though this standard of success may seem to some to be more exclusively accepted by us just now, the acceptance is not at all peculiar to the American of the twentieth century. It is only what has long been visible both in France and in England; and the industrial development in Germany has brought about the same state of affairs even in that land of soldiers and philosophers. When one of my Columbia colleagues was a student at Berlin thirty years ago, he was once told by a native that the Americans "worshipped the dollar,"—to which he retorted that the Germans had a similar god, only it was but one-quarter as powerful.

The real question that confronts us when we seek to attain an understanding of the present attitude of the American people is not whether success is here taken to mean material prosperity, but whether material prosperity is not received by us as the final test of success and as the sole touchstone of a finished career. And this is a question as important as it is difficult to answer. If we are admitting that the acquisition of money is the only standard of a well-spent life, then indeed are we in danger of confounding the end with the means. Then are we hailing the man who has merely entered the portal as though he had conquered the inner citadel. "What shall it profit a man if he gain the whole world and lose his own soul?"

While material prosperity is, of necessity, the immediate aim of the average man in the thick of the struggle for life, it ought not to be his only aim; and just so soon as he can feel his feet firm on the ground beneath him, it ought not to be his chief aim. And what may be, for a while, almost the whole duty of the inferior man, is only a small part of the duty of the superior man. When the desperate dread of want is no longer driving us to leisureless toil, and when a fair measure of material prosperity has been achieved by abundant energy or by early advantage, then the further accumulation of wealth ceases to deserve exclusive attention, since it is no longer needful to the individual or to the community. To continue to put forth all one's power for the sake of needless acquisition is a short-sighted selfishness which is not success but failure. It is a failure of the individual, which, if widely multiplied, must be fatal to the community.

There is no denying that there are now in the United States glaring examples of this failure, masquerading as success, nor can it be doubted that many if not most of those who are in the thick of the strife are willing enough to welcome this sham as though it were the genuine article. They are, as it were, hypnotized by the revolving glitter before their eyes; and they are in no condition to appreciate the truth of Beecher's saying that "there are a great many poor men who are rich and a great many rich men who are poor." They do not see that if they got what they are seeking, they would swiftly discover the imposture that they played on themselves. They cannot be expected to find this out until it is too late, until they have failed according to their own temporary standard, or until they have succeeded according to the standard which will betray them in the end. They have energy and determination and ability; but they are bending their powers to the attainment of an object which will never adequately reward the effort. They have not taken time to plan the journey before them and to decide whether they really want to arrive at the port for which they seem to be steering. "Most men," so Lowell has told us, "make the voyage of life, as if they carried sealed orders, which they were not to open until they were in mid-ocean."

But while there are too many men in the United States who are now recklessly making this blunder, they have had predecessors not a few in other lands. Even the wisest of men, who might be expected to have laid out the course carefully and cautiously, have been not infrequently shipwrecked by the false charts they have made for themselves and by the faithless compass they have chosen to follow. For example, consider the career of Bacon; no one ever sought success more deliberately than he did and with more abundant faculties; and his essays,—wherein we may read that " all rising to great place is by a winding stair,"—might be the handbook of all who wish to make their way in the world by worldly ways. But who is there now who wants the success that Bacon attained at the last? Or turn to Machiavelli, whose powerful intellect was only a little inferior to Bacon's; no one ever laid down more boldly the principles whereby a ruthless man might carve his path to success as he saw it; and his precepts seem to be accepted as valid and to be relentlessly applied by certain of the industrial princes of today. Yet the name of Machiavelli is now a by-word and a hissing; and the fact that his fate is not wholly deserved does not help him now.

Contrast Bacon and Machiavelli with Franklin, whose moral code may be lacking in elevation but whose practical wisdom was lofty enough. He preached a humdrum doctrine, that honesty is the best policy, that a penny saved is a penny gained, and that if you keep your shop your shop will keep you,—precepts which bore fruit in the lives of countless thousands of his future fellow-citizens. But he accomplished the rarer feat, of conforming his practice to his preaching; and thereby he found himself in his maturity in the possession of a comfortable fortune, whereupon he gave up the task of making any more money and looked out for an ampler and more congenial field of labor. To a man of active mind and energetic body, leisure could be but the liberty of the choice of a more interesting occupation. In his own freedom from mere money-making he saw the opportunity for a larger public service. He has told us that he early made the rule of never asking for an office and of never declining one; and in the second half of his career he was laboring as effectively for the public as in the first half he had toiled for himself.

Franklin was able to aid in achieving the liberty of his native land, only because he had first won freedom for himself. "Those only are free men," said Froude, "who have had patience to learn the conditions of a useful and honorable existence, who have overcome their own ignorance and their own selfishness, who have become masters of themselves." It was because Franklin had been untiring in overcoming his ignorance and because he was masterful in conquering his own selfishness that he was able to fill out perhaps the most outwardly successful career yet accomplished by any American, even if we admit that his limitations shut him out from certain of the highest things in life. His later and larger success was due to his never being satisfied with mere material prosperity, to his never confounding the means with the end, and to his generous understanding of the duty of every man toward his fellows.

It was Lamennais who declared that "human society is founded on the self-surrender or sacrifice of man to men, or of every man to all men; and sacrifice is the essence of every true society." Franklin might have smiled at the eloquence of the phrase; but he would have acknowledged its truth,—and he might even have explained that self-surrender and sacrifice need not be painful and that in the long run they are often pleasurable in the highest degree. Certainly he would have approved of a passage in one of President Butler's addresses, which insists that "the moral education of the individual human being to the point where he realizes the squalid poverty of selfishness and the boundless riches of service, will alone lift civilization to a higher plane and make true democracy secure."

The moral education of the average human being, here and now, in the United States, at the beginning of the twentieth century, has not reached this point. Indeed, it may be doubted whether it has ever been reached or whether it will ever be reached by the average human being in any country at any time—for reasons which are obvious enough. And it may be that the acceptance of material prosperity as the sole standard of success has been wider in the past few years in America than it ever was before. But to admit this, is not to admit that "political self-seeking and unlimited corporate greed have become a national religion," with the result of drugging the higher life with a "spirit of mercenary materialism." The evidence is plain today that even though we may have started along the road to national decay, lured by the glamor of the success which glitters, we have seen the danger-signals in time, and that we are now ready to retrace our steps, even if we have not yet regained the right path.

It is a good sign that the attitude toward the very rich seems to be changing of late. They are beginning to feel themselves more or less under suspicion, however much the society-reporter may delight in snobbish adulation. No longer is there a belief that the mere heaping up of money is a sufficient service to the community. There is an increasing tendency to apply a stricter moral standard and to ask embarrassing questions. There is a desire to know where the money came from and whether it was honestly come by. There is a manifest intention to sharpen the laws so that processes of acquisition which may have been legal even if they were immoral, shall hereafter be under the control of the courts. There is an awakening to the value of social service. There is a keener recognition of the fact that the really useful citizens cannot be measured by the money they possess. There is a closer scrutiny of character and a higher appreciation of its loftier types. There is a cordial welcome for these new men in public life, to some of whom it is possible to apply the noble words in which the younger Pliny described one of his friends—"who did nothing for ostentation but all for conscience, who sought his reward of virtue in itself and not in the praise of men."

On the other hand, it is not a little unfortunate that there seems to be intensifying a prejudice toward the very rich as a class, without due discrimination between those who have inherited fortunes honestly gained and those who have amassed large wealth by predatory devices. At times, this prejudice may bear hardly on those "who think their innoxious indolence their security"—to borrow Burke's phrase. But there are only too many among the inheritors of honest fortunes who mistake notoriety for fame and who alienate sympathy by foolish prodigality and by silly display. Some of them seem to spend large sums merely as a means of killing time—forgetting that there is no known way of killing eternity. Some of them reveal the laxity of morals which is ever likely to result from the conjunction of wealth and idleness. Some of them have taken part in that matrimonial exportation of heiresses, which seems especially revolting to the plain people. Most of them have failed to grasp the fact that an industrial community offers few opportunities to the selfish idler who has come into the stored savings of a father honored for his industry. A spendthrift who wastes the wealth he has inherited is likely to get his money's worth of repentance, sooner or later; but not a few of the fortunes recently inherited have been so vast that the weakling heir is really in no danger of reducing himself to actual poverty. He goes on his way, leading an empty life of lavish luxury, setting up a false standard for others and having very little real enjoyment himself.

The same unfortunate fate seems to have befallen some of those who, after a youth of honest toil, have suddenly found themselves in full manhood in the possession of large fortunes which they do not know how to put to any good use. Perhaps this class is larger just now in the United States than it has ever been before anywhere else, in consequence of the recent gigantic combinations of industrial enterprises, whereby comparatively young fellows who had been engaged in building up the several businesses, laboring with all their might and finding their fun in their hard work, have suddenly discovered themselves out of a job, and paid off with a huge sum of money which a few years earlier would have seemed to them beyond the dreams of avarice. It is not to be wondered that some of them lose their heads and that sometimes they lose their feet also.

It is in his narrative of Catiline's conspiracy that the shrewd Sallust pointed out the reason for the failure of certain of his earlier contemporaries in the final years of the Roman republic. "Men who had easily borne misery and danger and who had gone through the most embarrassing and the most painful difficulties without weakness, bent beneath the weight of leisure and wealth. What made their misfortune was that they had attained what men ordinarily desire." In those dark days the social organization of Rome was crumbling and private corruption hastened public disintegration. Here in the United States the social organization seems to be sound and to be able to adjust itself in time to changing conditions. Even if society is injured by the misdeeds and by the dangerous example of these energetic possessors of new wealth, it is not actually imperilled. They can harm the commonwealth only a little, even though they wreck their own lives.

They may even be entitled to some small share of sympathy, for they are not ill-meaning even if they are ill-doing. Their early years have been arduous, but full and rich in satisfactory achievement. By personal experience they were proving the truth of Stevenson's assertion that "to travel hopefully is a better thing than to arrive, and the true success is to labor." All at once their work has been taken from them; and they have had no time to teach themselves how to play. They find themselves with no restraining duties of the kind they are accustomed to; and they have the widest opportunities for so-called "pleasure-seeking." At first they can scarcely be expected to bear in mind that real relaxation is possible only in the interstices of solid work. They can hardly help rushing forth ardently; and by a strenuous pleasure-seeking for its own sake, they soon atrophy the function of wholesome enjoyment. In this pursuit, for which they have had no preparation, they have no models before them but the idlers of inherited wealth. Trained to make money only and not to spend it, they are tempted to set up as rivals of these idlers and to devote themselves to a display which is wasteful as well as unsatisfactory and to a self-indulgence which has been relaxed from all restraint.

It would be evidence in favor of the contention that the higher life of the American people "had been drugged with a spirit of mercenary materialism," if we found that the average man was looking up to these lusty and lustful spenders as creatures to be envied and to be copied. Indeed, if this vulgar extravagance was widely accepted as the proof of success in life, then might we be tempted to despair of the republic. But this is not the case; in fact, it is very far from being the case. The attitude of the average man toward those guilty of this splurging magnificence is rarely envious; rather is it to some extent contemptuous. For the most part their doings have awakened an amused scorn, when they have not aroused a wholesome anger. The temper of the people is healthy enough, even if the judgments of the people are often swift, unsympathetic and unsparing. Probably the spectacle of the pitiful efforts of these workers turned idlers to get something for their money has not been without profit to the body politic, in that it has stirred the conscience to insist on a stricter accountability to the moral law.

It was in the first half of the nineteenth century that Lowell wrote to his nephew a word of advice, which is as valid today as it was three score years ago. "Pin this up in your memory—that Nature abhors the credit system and that we never get anything in life till we have paid for it. Anything good, I mean; evil things we always pay for afterwards, and always when we find it hardest to do it." And this is curiously like a statement of his own creed that Huxley once wrote to Kingsley—"The ledger of the Almighty is strictly kept, and every one of us has the balance of his operations paid over to him at the end of every minute of his existence." The antics of the idlers, whether their wealth is inherited or suddenly thrust upon them, are a spectacle for gods and men; but there is no doubt who will have to pay the piper for their dancing. It is with little desire to figure in the whirling that the most of us gaze at the sorry show.

While the public attitude toward the idle rich of either breed is never admiring, rarely envious and generally contemptuous, its attitude toward the powerful group of masterful manipulators of the necessities of life is distinctly hostile. Their example has been as demoralizing as their mischievous activity has been dangerous. But this the plain people now perceive; and as a result the plain people are asking for laws which have iron teeth and for prosecutions which will put prison-stripes on a few of these predatory financiers. Probably these self-seeking captains of industry have been astonished of late when they discovered their unfortunate position in public opinion. Possibly they may even be moved to inquire whether the success they have achieved is really worth while—whether it is worth what they have paid for it. Certainly they might awaken to the fact that a man can scarcely be called successful in life when a large proportion of his fellow-citizens not only believe that he ought to be in jail, but would like to see him there. Success is at least a little dubious when men of immense wealth have to go into hiding or to escape out of the country to avoid the subpœna that might force them to the alternative of perjury or of testifying against themselves.

There is no abiding benefit in a material prosperity, however swollen, when its possessors are under the ban of obloquy, when the organs of public opinion are united in holding them up to scorn and even to execration, and when no voice is ever raised in their defense except by those whose consciences have been purchased by gifts. Perhaps there is even a hint of hysteria in the perfervid denunciation of the criminal rich; but even hysteria may have its significance. A remorseless crushing down of other men is likely in time to create a social vacuum; and we all know how hard it is for man to live alone. We crave, every one of us, the good opinion of our fellow-men. There is little companionship in mere money. A man who has lived for himself, without service and without sacrifice, driven by greed or impelled by the sheer exhilaration of the game he is playing, is not likely to find much satisfaction in a solitary counting up of the stakes he has won. Individualism raised to the *n*th is selfishness reduced to the absurd. Even lavish benefactions are coming to be regarded as hush money; and they do not purchase friendship or friendly association with those whose friendship is an honor. Many who are willing enough to accept "tainted money" for the sake of a worthy cause, meet the bestowers of this ill-gotten wealth only on suffrance. Among these leaders in the work of uplift the possessors of predatory riches cannot help discovering that although they have paid for their admission they do not belong within the circle.

They may be slow to make this discovery, since they are likely to be sheathed in self-esteem, an almost inevitable accompaniment of a life devoted to mere money-making. Here, indeed, is another disadvantage of starting out with the amassing of wealth as the only goal of ambition. If this heart's desire is ever attained it can only be at the cost of disintegration of character. It is almost impossible for any one who has heaped up a fortune unaided not to be conceited. While the artist and the author may have wholesome doubts as to the abiding value of their works, the man who has made money can measure it with precision. There it is before him, to be reckoned fairly in dollars and cents; and the simple operation of elementary addition is the solid support of his high opinion of himself.

To be raised above immediate want, to be well-to-do, to have inherited or acquired a comfortable fortune—this is a thing not to be despised, since it sets us free for work more interesting than barren self-support. But to have much more than this, to be possessed of immense wealth, is to be heavily handicapped. The tale is told of a multi-millionaire who had inherited his gigantic fortune and who complained that he had had no fun in life. He is reported as saying that he believed he had ability but he was not sure, as he had had no chance to prove it, no incentive to put forth the best that was in him. His excessive riches had disqualified him for taking part in any of the struggles which give zest to life, and he had found himself forced into a career of empty idleness. This seems to be a confirmation of a remark reported to have been made half a century ago by the man who was then supposed to be the wealthiest in New York—to the effect that any one who had half a million "was just as well off as if he was rich." And this again recalls the saying of a clever old lawyer to a client of moderate means whom he was trying to dissuade from a risky venture: "There isn't really so much difference between having a hundred thousand dollars and having a million, but there's an enormous difference between having a hundred thousand and having nothing at all!" There is sense in Ben Jonson's saying, "What need hath nature of silver dishes, multitudes of waiters, delicate pages, perfumed napkins? She requires meat only, and Hunger is not ambitious."

Probably many Americans who have made colossal fortunes have not been urged by avarice, by the naked desire for gain; rather have they been taken captive by the lure of the game itself, unwilling to draw out so long as they could sit in at the table. Perhaps some of them may be victims of the false reasoning which justifies a belief that as a moderate fortune helps us to enjoy life, a fortune ten times as large will provide ten times as much enjoyment. To argue in this way is to ignore the law of diminishing returns; and it is to commit the grosser blunder of supposing that pleasure can be bought with a price. But we all know that there is no shop where pleasure is sold—at least there is none where the products are guaranteed under the pure food law. Pleasure cannot be purchased, and it cannot even be sought for, with any chance of success in the pursuit. If we go gunning for pleasure, we are certain to come home with an empty bag, as well as with empty pockets, and the man who seeks that kind of sport generally starts out with an empty soul.

The truth is that pleasure is a by-product of work. The man who has something to do that he wants to do intensely and that he is able at last to do, gets pleasure as a fee, as a tip, as an extra allowance. Perhaps the keenest joy in life is to accomplish what you have long sought to do, even if you feel that the result might be a little better than you have achieved. Possibly the most exquisite gratification comes from the consciousness of a good job well done. The foolish talk about the "curse of labor" is responsible for much of the haste to gain wealth that we may retire into idleness. But if we are honest with ourselves we know that labor is never a curse, that it is ever a blessing. The theory that work in itself is painful, or that it is the duty only of inferiors, is essentially aristocratic and fundamentally feudal; it is hostile to the democratic ideal. Work is what sweetens life and gives delight to all our days. That man is happiest and gets the utmost out of life who is neither poor nor rich and who is in love with his job, joying in the work that comes to his hands. And that man is truly accursed who is refused the privilege of congenial toil because he has too much money.

There is a significant passage in one of the letters that Taine wrote toward the end of his well-spent life—an honorable life which had been crowned with all the outer rewards of success. "To my mind," he declared, "the hope of success, even success itself, does not suffice to sustain us; man needs an aim, something loved for its own sake. sometimes money or high place, which is the case of ordinary ambition; sometimes an object he will enjoy all by himself, a science he wishes to master, a problem which he wishes to solve to have done with it." The ordinary ambition, as Taine calls it here, money or high place, is a false beacon, and when he who is possessed by it attains to his promised land he finds it to be only a slough of despond, if it has led him to starve his capacity for getting out of life the things that are really worth while. He may seem to have succeeded, but he is left lonely amid those whose ambitions have been better inspired.

In spite of much that may seem like evidence to the contrary, the American people as a whole are not now setting up false standards of success. It is not true that they are drugged with "the spirit of mercenary materialism." There is really little reason to believe that the average man here in the United States, however much he may wish to be better off than he is, weighs his fellow-men by their balance in the bank. In fact, the average man today is not without a pretty high opinion of those whose minds are not set on money-making; and he is in no danger of denouncing as a dire failure a career devoted to the loftier things of life. He may at times display too much curiosity about the methods and the amassed money of Mr. Midas and of Mr. Crœsus; but he does not reveal any too great esteem for their persons. He does not actually envy them, even though he may wish that he also had a little more of the material prosperity of which they have too much. It may even be doubted whether he holds them to have been more successful than the men whom he admires as the leaders of public opinion and as the possessors of the things that money cannot buy. He may gossip about the latest entertainment or the latest benefaction of inordinately wealthy men, but he does not set them as high as he rates certain college presidents, certain artists, certain men of letters, certain inventors, whose power and success cannot be measured in money. He would not dispute Bacon's assertion that "no man's fortune can be an end worthy of the gift of being . . . and often the worthiest men abandon their fortunes willingly that they may have leisure for higher things."

All those who are old enough to remember the funeral of Peter Cooper and its outpouring of affectionate regard from all classes in the city he had made a better place to live in, will not need to be assured that the average American clings sturdily to the belief that public service, in office, or out of it, is the true gauge of a life. The most useful citizen is in fact the most successful; and it is those who have given loyal service to the community whom the community holds in highest regard. Probably the average American, if he were forced to give thought to it, would admit willingly that the unknown settlement-workers, who put behind them all desire for gain and who give their lives gladly to unostentatious service, have achieved a fuller measure of success than the most of the men who have been conspicuous in amassing millions.

Not what we have, but what we use;
Not what we see, but what we choose—

These are the things that mar or bless
The sum of human happiness.

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Not as we take, but as we give;
Not as we pray, but as we live—
These are the things that make for peace,
Both now and after Time shall cease.

Brander Matthews

IMAGINATION AND IDEALISM IN THE MEDICAL SCIENCES*

THE presidential invitation in response to which I am about to address you today was welcome to me because it offered a rare chance to express some views of medical progress which I think are too seldom presented to the student. I have in mind the influence of imagination and idealism on the growth of medical discovery. Vividly recalling, as I do, the experiences of my own student days, more than a quarter century past, I fancy you as coming to the acquisition of the myriad facts of medicine with little to tell you of the intellectual forces and historical sequences by which those facts have emerged. If this surmise be correct, it follows that you incline to take a static rather than a dynamic view of the nature of scientific medicine, in the sense that you regard medical lore as something much more fixed than is actually the case. In reality our science is fortunately plastic, constantly subject to revision of its facts, and ever ready to welcome new interpretations of old facts as well as new discoveries, both great and small. This very plasticity it is that makes progress attainable and fascinates our minds. But our text-books and our lectures are necessarily conservative and dispose us strongly to the notion of fixity of facts, making our minds statical in conception. I would like to dispel, in a measure, this retarding conception by telling you something of the ways in which gifted and trained minds have enriched the medical sciences by significant discoveries. And of the qualities underlying such discoveries I would emphasize especially the role of imagination and idealism.

The fine humanitarian aim of medicine always has been and always will be one of the features that make men love to practice the art. And the idealism that delights in the relief of human suffering and disability will remain alive so long as the healing art itself. But we must not blind ourselves to the fact that this very attitude of eager desire to help our fellows in distress is a source of weakness as well as a pillar of strength. For he who would answer the calls of the sick must resort to direct methods and must generally tread the paths of the obvious. He has not time to turn aside to the indirect ways of winning the citadel, nor, indeed, is he likely to be in the frame of mind which urges to such an approach; he is preoccupied with the crying needs of the suffering or dying man committed to his charge. Yet it is growing every day clearer that the progress of the medical sciences depends in a remarkable degree on discoveries made by indirect methods, that is, by methods not looking to the immediate relief of disease.

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* Portion of an address delivered at the opening of the College of Physicians and Surgeons, September 23, 1909. Because of its length, it has been found necessary to omit an important part of the address dealing with the work of Vesalius, William Harvey, John Hunter, Claude Bernard, Pasteur, Helmholtz, and Paul Ehrlich. The address in full is published in *The Journal of the American Medical Association.*

These discoveries are made chiefly by men who, while in deep sympathy with the humanitarian aims of medicine, nevertheless find time to turn aside to studies and experiments from which the active practitioners are, in general, excluded by the circumstances of their lives and the intensely practical nature of their vocation. There was a time when the alert physician or surgeon with little or no training in the experimental method might make important contributions to knowledge by following rather evident suggestions derived from the study of patients. The Romans, operating for stone in the bladder, Pare, using the ligature to check hemorrhage on the field of battle, McDowell, successfully removing ovarian tumors, give us examples of great advances along rather obvious lines of development. Today the chances for significant progress in such evident directions, although not exhausted, are far less frequent. The golden nuggets at or near the surface of things have been for the greater part discovered, it seems safe to say. We must dig deeper to find new ones of equal value, and we must often dig circuitously, with mere hints for guides. Our most effective tools are to be found in the experimental laboratory, where the fundamental sciences, physics and chemistry, come to the aid of physiology, biology, pathology and psychology. I would like to tell you of some of the many instances in which these sciences have come to the succor of medicine and have brought her riches of knowledge unattainable had she been limited to resources belonging to the accumulated experience which makes up the accepted material of medical teaching. If I incidentally say something of the personality of the men who have been the living instruments of this progress, it is in order to give you occasional glimpses into the workings of some of the most original and productive minds.

I like to think of medicine in our day as an ever broadening and deepening river, fed by the limpid streams of pure science. The river at its borders has its eddies and currents, expressive of certain doubts and errors that fringe all progress; but it makes continuous advances on the way to the ocean of its destiny. Very gradual has been the progress of its widening and deepening, for it is a product of human ingenuity and artifice and only skilled engineers could direct the isolated currents of science into the somewhat sluggish stream of medical utility. The names of some of the greatest of these engineers are familiar to you—Vesalius, Harvey, Malpighi, John Hunter, Claude Bernard, Helmholtz, Virchow, Metchnikoff, Pasteur, Lister, Koch, Behring, Ehrlich, Emil Fischer, Weigert, Wright, Theobald Smith, Flexner. Different as have been the achievements of these men, there are some qualities of mind and of heart which nearly all of them have shown in ample measure, and of such qualities none are more evident than imagination, or play of fancy, and personal idealism, using the latter term to mean a readiness to make sacrifices for the sake of lofty achievement. And I think we are quite safe in making the generalization that the discoveries for which we hold these thinkers in honor would have been impossible but for the exercise of these qualities. If this be true, the fact furnishes us with a clue to present tendencies in medicine and shows us to what sort of gifts we have to look for the significant advances of the future. I therefore hope to make good my generalizations by a series of examples.

If we look over any list of the names of the makers of modern medicine, we shall find that they may be classed in two main and definite groups, according to the intellectual trend for which they stand. One group holds the men who look at the problems of medical science largely from the standpoint of structure and arrangement. They have the instincts and interests of the morphologists. They represent anatomy, embryology, pathological anatomy and histology. They have usually been men of powerful and logical minds, craving the positive, the definite and the attainable, either shunning somewhat the speculative aspects of science, or moving uncomfortably in the midst of ill-defined or challengeable facts. In this class belong Versalius, Von Baer, Bichat, Virchow and Weigert, who represent with maximal distinction the group of investigators with dominant morphological tendencies.

In sharp contrast with this definite type stands the second group, made up of men whose interests lie in the study of function, rather than structure and whose minds, far from being dismayed by the speculative aspects of their studies, invite such speculation so long as it is severely inhibited by frequent appeals to facts won by experiment. The members of this small group are dynamically minded, highly imaginative, delighting in the play of forces. They are essentially experimentalists and their thoughts, in leisure hours as in the hours of work, turn always restlessly and uncontrollably in the same direction—to the planning of new experiments designed to answer the questions uppermost in consciousness, questions having nearly always to do with the phenomena of living beings. Claude Bernard, Helmholtz, Pasteur and Ehrlich are the unexcelled prototypes of investigators of life-phenomena in medicine, and we shall not go far astray if we fancy them as spirits inspired by

All that is great and all that is strange
In the boundless realm of unending change.

We have also, I think, to recognize an intermediate group of great investigators who, while highly trained in a morphological way, have shown also a deep and productive interest in the functional aspects of organized nature, without, however, attaining the highest levels of achievement in thought on the dynamical side of medical research. In this category we may place Harvey, Malpighi, John Hunter, Johannes Müller, Cohnheim and Robert Koch. And I think we may safely add that most modern investigators, educated under the influence of the strong trend to physiological thought, belong in this immediate position.

. . . .

It is a cheering sign of the times that the cultivated classes are beginning to recognize the essential role of imagination in the progress of the biological and medical sciences. President Eliot remarks that the nineteenth century has taught us that, on the whole, the scientific imagination is quite as productive for human service as the literary or poetic imagination. The imagination of Darwin or Pasteur, for example, is as high and productive a form of imagination as that of Dante, or Goethe, or even Shakspere, if we regard the human uses which result from the exercise of imaginative powers and mean by human uses not merely meat and drink, clothes and shelter, but also the satisfaction of mental and spiritual needs. The history of medical discovery is a long chain of imaginative experiences whose links have been welded and fixed by passing through the fiery ordeal of appeal to experimental tests. And could we but set forth, in fitting language, the true story of these mental experiences, with all their vicissitudes of hope and despair, success and failure, we should certainly dispel for all time the widespread notion that medical research is a dry and painful task, to which only an unimaginative mind can turn with satisfaction.

There is a phase of imaginative thought and feeling which expresses itself in a strong desire to pursue ideal ends, even at the cost of the ordinary prizes of life, wealth, material power and physical comfort. This idealism has been a very pronounced attribute of the great masters of medicine. In a noteworthy degree they have all possessed it and some, like Helmholtz and Pasteur, have led lives of unpretentious, simple self-sacrifice in admirable harmony with the illustrious and superlative service they have rendered mankind. This idealism, while clearly a moral trait in the conventional sense, seems to be the offspring of the creative intellectual attitude and especially of an absorption in work, which leaves the mind neither time nor inclination to seek the petty advantages for which most men at some time in their lives find themselves struggling. For these reasons indifference to vulgar aims and aloofness from common-place interests are apt to be found where there is preoccupation in productive work of a high order, whether this be concerned with science or not. But in the medical sciences the rewards are so great, in the sense of personal satisfaction from superior achievement, that there is an especial and peculiarly potent incentive to repress those exaggerations of the self-preservative instinct which show so insistently in the selfish conduct of common-place persons. Yet I do not think it can be claimed that the motives of even the greatest masters of medicine have always been purely altruistic. In the days of struggle for recognition, during early manhood, there has commonly been evidence of mixed motives for action even in the case of the noblest men; and at this we can hardly wonder. Sometimes the spirit of self-interest has been given too free a rein. When Behring patented the diphtheria antitoxin, avowedly with the intention of gaining money for further research, he committed himself to a dubious policy and one that deprived many children of the benefits of the life-saving discovery by raising the cost of the antitoxic serum to a prohibitive level. When Morton found that sulphuric ether could be used for purposes of general anæsthesia, he had no hesitancy in trying to secure for himself a patent for his method. When we contrast this attitude with that of Helmholtz, who gave the opthalmoscope to medicine, and of Pasteur, who freely gave his immensely valuable discoveries, it is hardly necessary to comment on the difference in spirit that animated these men.

There is a special quality pertaining to the greatest masters of medicine which arrests our attention when we survey their life work. This is the wonderful variety and number of their discoveries. We are struck with this quality of productivity in the works of Hunter, Malpighi, Johannes Müller, Claude Bernard, Helmholtz, Pasteur, Koch and Ehrlich. In some instances the range of topics is relatively narrow, as in the case of Koch, or extraordinarily wide, as in the case of Helmholtz, but in nearly all instances the great masters have been repeatedly productive and this varied productivity on a high plane is an unfailing mark of genius. On the other hand, it is necessary to recognize that very important discoveries in medicine have been made by men who once in their lives, and once only, have attained a high level of achievement.

There are two examples of this singularity in discovery which I would bring particularly to your notice—one the discovery and development of the antiseptic method by Lister, and the other the discovery of general anæsthesia by Morton.

When Lister visited Pasteur in 1865 he was much impressed by the attitude of the great master in regard to the wide part played by micro-organisms in fermentation and disease. As a surgeon he had a deep interest in the diseases of wounds and the idea established itself in his mind that such diseases might be due to a kind of fermentation, which might be checked or prevented by the use of antiseptics. This idea, worked out by Lister with the utmost patience and superior intelligence, gave the wonderfully far-reaching results with which we are all familiar. The important results of Lister's methods are not limited to the surgical diseases of human beings. By making it possible to experiment on animals in wholly new ways, these methods have placed in the hands of the physiologist a powerful instrument for the extension of medical and biological knowledge along most significant lines of progress. We have therefore to concede that Lister's discovery is one of such rich fertility as to make it rank among the great discoveries of medicine. Yet it can not be claimed that Lister was a great scientist. In training, in originality, in versatility and in imagination he is far from being the peer of the great masters of whom we have spoken. And we see here again that the practical import of a discovery is no arbitrary measure of the scientific attainments of the discoverer.

Hardly less valuable an asset of practical medicine is the discovery of general anæsthesia, but it appears that the qualities of mind revealed by Morton belong to a level less high than that of Lister. Morton was an alert, enterprising young dentist in Boston, who, while educating himself in medicine, successfully practised his calling and invented an improved system of dental plates. The use of this system required the free removal of carious and otherwise diseased teeth, and this caused great pain. To relieve this pain, Morton pertinaciously sought an efficient anæsthetic. After many unsatisfactory trials with different substances, he experimented with sulphuric ether, given him by Jackson, the professor of chemistry in the Harvard Medical School. In 1846 he succeeded in demonstrating the efficacy of sulphuric ether as a general anæsthetic and thus gave mankind a precious, almost unequaled boon.

This great discovery cannot be reckoned as one of the highest fertility, since aside from anæsthesia it has not opened new lines of thought or practical service. Neither can it be said to have sprung from a scientific mind of exalted qualities and attainments. It has the earmarks of a child of empiricism. Morton's scientific knowledge was slight, and his mind had a strong commercial bent. The singularity of his discovery, the only one of his life, points neither to fertility of resource nor to lofty imagination, but rather to the fortunate combination of conditions under which he insistently exercised his ingenuity.

Having told you something of the qualities shown by the modern masters of medicine, I now ask your permission to speak of certain aspects of these qualities as they seem related to the career of the thoughtful student of medicine. And first of all I would correct in your minds any impression I may have made of a discouraging nature. Having drawn our examples of medical advance so largely from the work of supremely gifted men, workers in laboratories, many of whom have not been practitioners of medicine, or have only casually practised, it may possibly appear that you are confronted with the paradox that an essential condition of the loftiest success in medical science is to abstain from the practice of medicine. There is, indeed, a measure of truth in this, for, as I have already tried to show you, entire absorption in the practical problems of medicine unfits men to pursue with the highest success the career of discovery. In this there is naught of real discouragement, but only a sign that the problems of disease, as we meet them by the bedside, are far too complex to permit solution there. There was a time when all medical discovery was based directly on observation at the bedside. Then, with the growth of anatomy, the invention of the microscope and the coming of the twin handmaids of medicine, physics and chemistry, the laboratories sprang into existence. Much there was that could be discovered only by laboratory methods, and so it happened that some men were justified in working at medicine, and able to become masters of medicine, though they scarcely left their laboratories. But I would have you note well that we have now entered on a time when the clinics and the laboratories must work more and more closely together, aiding one another at every step to bridge the wide chasms of our ignorance. And just here lies one of the greatest opportunities for the alert student of medicine, undergraduate and postgraduate, to do something worth while. For the problems are so many, so varied and so widely graded as to their difficulties, that for almost every earnest student there is at hand a theme suited to his powers and training. It is the tendency of the times for schools of medicine to give their students the chance to observe for themselves at the bedside. To make new observations worthy of record and helpful to patient and student alike, it is necessary that the student should be trained in methods of clinical examination and in the methods of the laboratories. With a very moderate equipment in these directions the thoughtful student has before him a wide field of effort in which to cultivate his powers and increase his efficiency.

I have intimated my belief that the powerful and controlled imagination is generally associated with a strong vein of idealism. The explanation is not remote; the imagination separates the wheat from the chaff in the realm of ideals, picturing vividly what will yield enduring satisfaction. In persons of average capacity and imagination, idealism is more halting because the perceptions of what is permanently worth while are less definite and carry less firm conviction. Hence in such persons idealism of conduct is less spontaneous and calls for conscious effort to sustain it. It is indeed a quality which may be deliberately cultivated if the germ exists in the character.

What I would like particularly to impress is that without idealism of purpose, without the willingness to make sacrifices of material comfort and much that the world overprizes, the career of the student and practitioner of medicine is almost certain to be pitifully limited and mediocre. He will do well who has the character to run his course in a strong spirit of independence, satisfied during the long years of professional preparation with the slender means that permit the prolongation of some phase of the student life long after graduation from the medical school. There is no surer road to hopeless mediocrity than that which leads the young physician to assume an active practice before he is ripe for it. On the other hand, the student physician who waits patiently, year by year, to strengthen his intellectual grip on the processes of disease, if possible under the guidance of some master of medicine, is laying the unshakable foundations of a telling and distinguished career. He need have no anxiety as to the future either on the score of professional recognition or the ability to earn a sufficient income. For the world needs and must ever seek the serious, well-trained, idealistic physician whose first thought is to render a high grade of service. The superior type of student will not dread the long years of preparation in laboratory and clinic. He will eagerly seek them and will count it the greatest privilege of his life to be able to utilize and develop his powers. The fascinating interest of his problem and the elevation of his ideals will keep him buoyant under circumstances of discouragement. If he be blessed with a fair share of imagination and idealism, he will never falter in the struggle to make a worthy career, for he will know that he is treading in the footsteps of the great masters of medical science and that in doing so he is helping to assuage human suffering, perhaps also to illuminate some of the dark problems in the baffling mystery of life. And in this consciousness will he find ample compensation for the self-abnegation which such a career must necessarily exact from its votaries.

CHRISTIAN A. HERTER

LAW AS AN EDUCATION STUDY

EDUCATION does not consist merely in the acquisition of knowledge. Its purpose is not culture; at least, it should not be. Its purpose is not polish: Some of the most highly polished vessels give out the hollowest sound. And finally, education is not a process for the dissipation of the mental faculties over a vast array of subjects, many of them to be toyed with for a moment, and none of them to be mastered.

The misconception of "education" has found recent illustration in a statement by a well-known educator—that any person may educate himself by spending ten minutes a day on five feet of books—provided he, the educator, were allowed to select the books. This is a good advertisement for the books, but a sad blow at education. If the reply were made to him that no one could possibly be educated in that way, such reply would not be nearly so reckless as his statement, but much more truthful. The idea that educational institutions largely consist in books has long since become obsolete, or should have, if it has not. It is the trained, disciplined minds of instructors, leading and guiding from day to day through the various processes of thought those who attend for instruction, that make a genuine educational institution. Nothing will do as a substitute—neither books, nor application to them, nor splendid buildings, nor laboratory equipment. All those material things have their uses, but at best they are merely incidental. President Garfield once said that his idea of a perfect university was a log in the woods with Mark Hopkins at one end of it and the student at the other.

Our chief trouble has been that we have too often regarded the mind as a stomach to be overloaded with all sorts of things, digestible and indigestible, and without any proper consideration of consequences. But the mind is not a receptacle to be crammed with unrelated chunks of information. It is rather like a set of muscles, to be strengthened and made flexible, and accustomed to hard and varied exercises, until its use becomes perfectly natural, yes, even automatic and until it is a delight to the student to use it. The thinker delights in his thought, "even as a strong man delights to run a race."

It was upon the misconception that education meant an accumulation in the student's mind of a heterogeneous mass of undigested facts and of disassociated ideas that the very liberal elective system in colleges was based. The introduction of that system when it was first proposed was hailed with acclaim as an inspiration of genius. In fact, it was no such thing. What boy of seventeen, which is the average age at which the student enters college, is capable of selecting from a mass of subjects those which are best adapted to the training of his mind? What does he know at that age of the probabilities of his future? How can he tell what his life work is going to be? And if he did know, what difference would that make? He might accumulate a few facts along the line of his intended work, which he would be just as likely to forget, and meanwhile he would miss the real purpose of his college course, which is not at all the accumulation of knowledge.

There are some things which can not be said too frequently, and one is that the purpose of education is to give a mental discipline, an intellectual training, or, in a word, to teach the student to think. If he does not acquire this power, he never is educated; if he once does acquire it, he never will lose it. Mental discipline, ability to use the mind, does not depend upon memory. The other things the student learns do. The other things are temporary, while ability to think is a permanent acquisition. It can no more be lost than can the knack of swimming. For example, the statement, sometimes heard, that a certain man "knows the law," has, as its basis, a misconception; no man can "know the law," but he can have worked over principles and have worked out principles, and have trained his mind upon them to such an extent that it will work naturally to the solution of the legal problem involved in any new set of facts.

What the student will need for his business or professional career is not scraps of knowledge. The possession of a lot of lumber does not make a carpenter. It is ability and skill in the use of tools which makes the carpenter. A man might have an excellent set of tools and unlimited lumber, but he could not build anything if he did not know how to use the tools; on the other hand if he has the tools and knows how to use them, he is fully equipped for his work, because the lumber is easily and quickly obtainable at all times. High scholarship and the acquisition of information are good, but mental training is better. As Dr. Hadley said the other day, the ideal education is "one where the student learns things that he is not going to use in afterlife, but by methods that he is going to use."

There are certain subjects, which, it would seem, cannot be successfully studied without the acquisition on the part of the student of some of this mental training of which we have been speaking; that is, there are subjects which require for any kind of mastery those mental operations which are a part of that training. And then, when you have such a subject to work upon with the student, and an instructor who has himself thought it through and can inspire the student to think it through with him, you have a perfect piece of educational machinery. Some studies are more conducive to logical thought than others; of these, law is the most conducive. Some studies are better adapted to the training of the reasoning powers than others; of these, law is the best adapted. Some studies give more mental discipline than others; law gives more than any other.

Very much depends upon the manner in which law, or any other subject for that matter, is taught. The instructor must be able to stimulate and inspire the student. The student may come to the classroom charged with a desire to learn and the instructor may come charged with a desire to impart, and these are the two poles of the battery. But, unless the right atmosphere be created, a proper conducting medium, and unless the two poles be brought into close proximity, there will be no flash and therefore no light. It is for the instructor to make the "atmosphere," and bring the currents together. It is the instructor, of course, who is the element of prime importance in the process, but a proper subject is of the utmost importance. For, while it is true that, in the matter of education, it is not so much *what* a man studies as *how* he studies it, it is likewise true that the subject will have an important influence in determining the method of his study. The instructor and the subject fix the methods of study and control the mental processes of the student in his course. It would seem as though the discussion, which has been carried on by some periodicals inside and outside of universities, as to the need of faculty advisors to encourage students in their work and teach them how to study, has started from an erroneous premise and has therefore missed the point. There is no formula for working out the problem of education. There is no set of rules by which the student's interest in a subject may be created. He should need no stimulus outside of the classroom in which he does his work. If he does not find it there, he will not find it anywhere. A proper subject handled by a competent instructor, thoroughly interested in his work, can not fail to create in the student enthusiasm for his tasks which will make him wonder why he ever imagined that he needed advice upon the question of how to study. He learns how to study, if at all, by meeting the requirements of the classroom. Want of enthusiasm in the instructor and inadequacy of the subject are the things that most frequently prove fatal to successful work by the student. If the instructor is without interest and is bored by his own teaching, the student is certain to be bored likewise, and then the instructor's usefulness is at an end.

To secure the best possible results in a school of law, the student should come to the school, if possible, with a mind trained in the manner above referred to, to a degree at least. This previous training saves the student and the instructor a very great deal of time in the law course which would otherwise have to be consumed in helping the student in this mental development, and which can be profitably spent in extending and deepening this mental discipline and teaching the student to apply it to the particular processes and the particular intricacies involved in questions of law. So important has this previous training been considered that we have, in some law schools, refused to admit students who do not bear credentials testifying to its possession, and we have adopted, as the best available proof of the acquirement of such previous training, the possession of the bachelor's degree of certain accepted colleges. The latter are " accepted " on the basis of what is supposed to be their peculiar capacity to give that kind of mental training of which we have been speaking, and the award by them of the bachelor's degree is supposed to indicate the extent to which such training has been given. But we recognize the fact that at best it is but an imperfect test. We have all seen men in law schools who have had the advantage of the so-called college education, whose minds seem to be almost, if not quite, untrained, and, on the other hand, we have frequently seen men who have had no such previous college course, but who, driven by stern necessity to earn, by their own unaided efforts, sufficient means to support themselves and others dependent upon them, have disciplined and educated their minds more truly and far more thoroughly than many a man who has been through college. It is not of importance how much school or college he goes through, but it is of vast importance how much school or college goes through him.

The point is that a thorough mental training is indispensable to a legal education worthy the name. If, fortunately, the student gets some of this training before he enters the law school, so much the better. His law course will be much easier and much pleasanter for him, and he will receive a larger measure of instruction from it. But get it he must, and it should be utterly impossible for him to finish his course and receive the mark of approval of the university in which it is given, until he shall have demonstrated beyond a doubt the acquisition by him of that facility in thought, that ability to reason and that grasp of the processes of deduction and induction which, when applied to a system of law, mean legal education. If the student does not acquire these things in the secondary school or the college, he must inevitably acquire them in the law school. It is possible for him to go through the secondary school, and even college, without thinking very much, if at all; but once he has entered the law school, he will find very shortly that, unless he has acquired ability to think theretofore, he will be obliged to acquire it forthwith or quit the study of law. This is only a long way of saying that the study of law is the best possible medium for imparting to the student a thorough mental training. Under proper safeguards and tests, the student can not succeed in his course unless he shall have made himself the master of this power. As a means for the cultivation of the mind, no other subject approaches the study of law. Its value in this respect is quite apart from the use to which it may be put in the practice of law. If the training and knowledge gained in the study are to be put to use in the practice of law, then the course will count doubly; but whether they are put to such actual use or not, it may be boldly asserted that there is no study so well adapted to mental training, and therefore of such great importance in the way of education as the study of law. I have been in a position in which I have had opportunity to ascertain the truth of this assertion. I have been repeatedly informed by business men, by clergymen and by others in all walks of life who have thought upon the subject, that they have come to the conclusion that the best equipment which they could have had for the pursuit of their various vocations would have been the study of law. Instructors in theological seminaries have said that if the students in their institutions could have had even a year or two at the study of law before beginning their study of theology, they would have found it of tremendous advantage. Some of the most successful clergymen have been those who, previous to their entry into the ministry, have studied law, and in some instances have been actually engaged in its practice. All of which goes to prove, does it not, that the important thing in any branch of endeavor is not so much the actual knowledge of the facts, figures and data peculiarly relating thereto, but rather the general mental training or discipline which constitutes the ability to understand, collate and deal with them. As the greatest of all sages has said: "Wisdom is the principal thing. Therefore get wisdom; and with all thy getting, get understanding." A knowledge of the facts, details and circumstances attending any particular pursuit is not so difficult to acquire; the trained mind to *apply* them is comparatively rare. It is the quality and extent of mental training which makes for superiority anywhere.

The reasons why the study of law is superior to any other study are not far to seek:

First, it is a science based upon logic. Its principles are reached by processes in induction and deduction. It can not be taught properly unless the instructor require that the student state and explain the process of reasoning by which the ultimate proposition is determined; and he can not master any branch of the subject except he learn to employ for himself that process of reasoning. It is inevitable that, by the time the student has finished his law course, he shall have acquired such facility in the use of his reasoning faculties that he shall employ them easily and without conscious effort.

Secondly, the subject concerns itself with the humanities. I do not mean humanities in the spurious sense in which that term is sometimes applied to some subjects in the ordinary college course. The term is used here in its true sense. It is justice as between man and man, which is the end and aim of all law.

Constricted somewhat by tradition, limited to an extent by unfortunate decisions of courts, warped by special circumstances unduly affecting its course of development, yet the law presents, on the whole, a comprehensive system of causes and effects, of sequences and consequences, of remedies nicely adjusted to corresponding wrongs. Could there be found anywhere else so attractive and so satisfactory a field for the exercise of the mind and the training of the mental faculties as here in the study of law, where the rights and wrongs of men and women are the subject matter, and where it is only by the application of pure reason and sound logic that those rights may be properly ascertained and established, and those wrongs adequately redressed?

CHARLES THADDEUS TERRY

THE SCHOOL OF MINES IN 1883

PREVIOUS to the establishment of the School of Mines, in 1864, Columbia was a college of the old-fashioned kind. Though it offered certain courses in the natural sciences, there was no equipment whatever for technical or engineering education. In fact, up to that time, there were but few institutions in the country possessing facilities for training young men in any branch of engineering.

Our School of Mines, first in its own field, was founded when the mining industry of the country was hardly past its infancy. Coal was being mined chiefly in Pennsylvania, Ohio, Illinois, Maryland and West Virginia; as a rule, in an unscientific manner and on a small scale as compared with the operations of the present day. During the year ending June, 1864, the total recorded coal production of the United States was somewhat less than seventeen million tons, nearly all of which came from the five states named, Pennsylvania alone contributing 12,700,000 tons. It is now nearly thirty times as large. The iron deposits of New Jersey, New York, Pennsylvania, Ohio, Michigan and a few other states, had been exploited to a limited extent, about one-half of the total product of the country coming from Pennsylvania. The production of iron ore has increased from three million to sixty-three million tons. In Missouri, Illinois and Wisconsin, a little lead and zinc were being mined. Though California was well known for its extensive gold placer deposits, not many large vein mines had yet been opened. Nevada was producing some gold and silver, chiefly from the Comstock Lode; Colorado had had its "Pike's Peak excitement" in 1859 and several gold and silver districts were being successfully worked in that state, though the quantity of silver produced prior to 1870 was unimportant. A small quantity of gold, also, came from the Carolinas, Georgia and Montana, and a little copper from the mines on Keweenaw Point, Michigan,* with scattering contributions from a

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* Michigan produced 10,900,000 lbs. of copper in 1864, 59,257,000 lbs. in 1883 and 220,317,000 lbs. in 1907.

ENTRANCE, SCHOOL OF MINES

few other states. The greater part of the copper then being used in the arts and manufactures was imported from Europe. Our production now is nearly sixty times as large as in 1864.

The growth of the mining industry of the United States, which has taken place in the lifetime of the School of Mines, may be exhibited by the following approximate figures of output of some of the chief mineral products for the years 1864, 1883 and 1907:

	1864 (Civil War Period)	1883	1907
Anthracite coal, tons......	17,000,000	35,418,000	86,342,000
Bituminous coal, tons....		72,664,000	393,692,000
Iron ore, tons..............	3,000,000 (est.)	9,200,000 (est.)	52,955,000
Lead, lbs.....................	30,000,000	287,914,000	852,292,000
Zinc, lbs.....................	unrecorded 1,658,000 exported	73,744,000	499,224,000
Copper, lbs..................	16,000,000	115,080,000	948,196,000 (in 1908)
Gold..........................	$46,100,000	$30,000,000	$90,370,000
Silver, ozs....................	8,508,000	35,730,000	56,514,000

The figures for 1883, which year happens to be nearly at the half-way point of the School's history, are interesting in showing what enormous strides have since been taken by the mining industry. In chemistry, also, especially organic chemistry and its applications to the arts and manufactures, great advances have been made. Respecting civil engineering, it may be pointed out that the total railroad mileage of the United States was 33,900 miles in 1864, 121,455 in 1883 and 232,045 in 1908. In 1864 about twelve thousand tons of steel were made in this country. Its quality was inferior and its cost (over $150.00 per ton) too high to permit its general use for construction purposes. Our production of steel in 1883 was 2,830,400 tons; in 1907, 23,216,000 tons. In 1867 steel-rails cost $165 per ton and did not fall below $100 until 1874; in 1908 the price was $28.00. The Bessemer process had been invented only a few years before the establishment of the School (in 1856), the "open-hearth" process in 1858 and the Siemens-Martin in 1864–5. The best bar iron had risen during the Civil War to $146.00 per ton, dropping in 1866 to $98.00 and in 1908 to $40. In the war period the price of pig-iron rose from $20 to $59 per ton, falling to $44 in 1867. Its price in 1908 averaged $17.25. In

1864 and for years afterward bridges were chiefly of wood. In that year the driving of the Hoosac tunnel, in Western Massachusetts, the first large work of its kind in the country, was just beginning, and in connection with it many of the initial problems in the design of air compressors and machine rock-drills were solved. Municipal water and sewerage works were rudimentary and comparatively few in number; steel-frame buildings were unknown even as late as 1883, as were also pneumatic foundations, as the term is now understood. So it happens that the history of the School of Mines is contemporaneous with great advances in the several branches of engineering, and of chemistry and metallurgy.

In the earlier development of the great mines of the Comstock Lode (from 1859 to say 1867), and other districts of Nevada, together with some of the California, Arizona and Mexican mines, a number of the leading engineers were men who had studied in the European mining schools, chiefly Freiberg and Clausthal. Many of them were stronger in theory than in practice, and labored under the disadvantages incident upon a foreign training in countries where economic and geological conditions, and the ore-deposits themselves, differ in many respects from those of this country. But the pioneer mining engineers and metallurgists did good service, on the whole, and left their impress on the districts in which they worked. Some were well informed in chemistry, metallurgy and ore-dressing, as developed up to that time in Europe. Von Cotta's and a few other treatises were their guides for the study of ore-deposits; Combes, Ponson, Burat, Rittinger and Gaetschmann, for mining and ore-dressing. These early engineers had no small part in devising suitable methods for developing and working the mineral deposits and in designing the rather crude mining machinery of the period. A large part of this machinery was built by the Union Iron Works, of San Francisco, Fraser and Chalmers, of Chicago, the Mecklenburg Iron Works, of Charlotte, N. C., and Ribon and March, of Jersey City. The early designs, based on European practice, were gradually modified, under the stimulus of the development of mechanical engineering in general and to suit the conditions prevailing in this country. Meantime, the prospectors and "practical miners" of the western states and territories had become a prominent factor in the mining industry, and were often arrayed against the educated engineers, whom they stigmatized—and sometimes justly—as theoretical and consequently unsafe men to intrust with the conduct of mining enterprises.

This was the state of affairs when the School of Mines began to send its graduates into the field. A strong prejudice existed against the technically educated man, and many a young engineer found it to his advantage, when going into the far west, carefully to conceal the fact that he possessed a diploma. But conditions soon began to change. The practical man learned from the engineer, and the engineer tempered his theory more and more with experience often born of failure. The time came when an engineering degree, aside from the intrinsic value of the training which led to it, became a substantial asset of the possessor.

The interesting story of the founding of the School of Mines, during the presidency of Dr. Barnard, the framing of the curriculum and the first few years of its life, has been told inimitably at recent alumni gatherings by Dr. Charles F. Chandler.* Some of the difficulties encountered were of a financial nature; others were those usually met by the organizers of any venture in a new field. Doubts were entertained as to whether a sufficient number of students would present themselves to warrant the existence of a School of Mines. But the results of the first year removed all uncertainty, and proved the good judgment of Professor Egleston, who suggested the new departure and who, with Professors Chandler, Vinton and Newberry, carried out the work of organization. At first the regular course was three years in length, preceded by a preparatory year. The four-year course was inaugurated in 1876.

Passing to the year 1883, we find in the School an organization not materially different from that which existed when the first class graduated, except that a department of architecture had been established in 1881. But, in the past twenty-five years, such great changes have taken place that a graduate of the early eighties, who has not kept in touch with the University, would find it difficult to recognize the School as it is at the present time. The growth has been not only in number of students and of teaching staff, but also in complexity of organization and breadth of curriculum. Although established primarily on the general lines of the older European mining schools, for the training of mining engineers, metallurgists and chemists only, it was not long before a course in civil engineering was added, the first degrees in that subject being granted in 1875. In 1883 the School occupied two four-story brick buildings, forming an L on the southwest corner of Fourth avenue and Fiftieth street. On the Fiftieth street side were the chemical and assay laboratories, first and second year drafting room, the School of Mines library and dean's office, two large lecture rooms and a few studies of the teaching staff. The Fourth avenue "factory" building housed the fine mineralogical, geological and chemical collections, formed respectively by Professors Egleston, Newberry and Chandler, together with several lecture rooms and departmental offices. Also on the Fiftieth street side of the block was the old brick and stucco building, which was originally erected for Columbia College in 1856–7. This served a variety of purposes, containing the lecture room, laboratory and offices of the department of physics, a room for recitations and lectures in mathematics and mechanical engineering, a drafting room for machine design, while still others were occupied by the classes in French and German, which were not then required for entrance, but formed part of the four-year curriculum. It is worth noting that a small gymnasium, with a few pieces of improvised apparatus, was fitted up in 1882 in the basement of this building. It was, I believe, the first gymnasium ever possessed by the University. The subjects of mechanics and part of the mathematics were given in two of the lecture rooms in Hamilton Hall, that building having been completed in 1881. The library of the School of Mines, occupying a single large room, was entirely distinct from the College library. It contained about 8,500 volumes, of which fully 2,000 volumes were government reports, the remainder being largely on chemistry and the other natural sciences, together with a good representation of such books on engineering subjects as were then extant. The College library for some years had been in a rather chaotic state. Having no building of its own, it had so outgrown the available shelf-room that much of it

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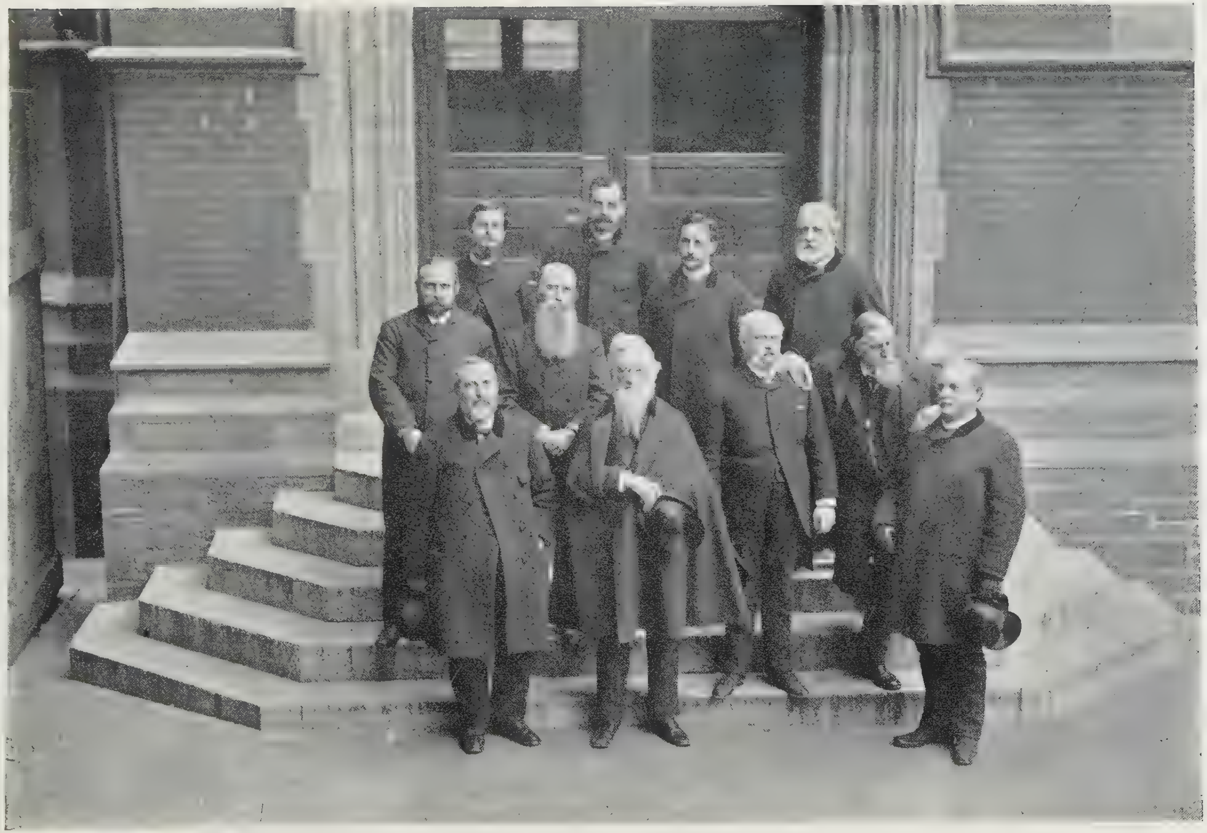
* See also his "Sketch of the history of the School of Mines," COLUMBIA UNIVERSITY QUARTERLY, December, 1907, p. 23.



J. K. REES
F. R. HUTTON H. S. MUNROE W. R. WARE
C. F. CHANDLER J. S. NEWBERRY
THOS. EGLESTON J. H. VAN AMRINGE O. N. ROOD
PRESIDENT BARNARD W. P. TROWBRIDGE

FACULTY OF THE SCHOOL OF MINES IN 1883 (EXCEPT PROF. W. G. PECK) was practically useless until the completion, in 1882, of the handsome library building on Forty-ninth street.

At the time of which I write,* Professor Charles F. Chandler was, as now, head of the department of chemistry (and also dean of the School of Mines). He lectured on general and applied chemistry, while the laboratory work, with the accompanying lectures and recitations, was conducted chiefly by Doctors Elwyn Waller and Henry C. Bowen (quantitative), Doctor James S. C. Wells (qualitative) and Doctor Pierre de P. Ricketts (assaying). Thomas Egleston, professor of metallurgy and mineralogy, was assisted by Charles A. Colton in determinative mineralogy and blow-pipe analysis. Mr. Colton resigned in 1882 and was succeeded by Alfred J. Moses (now professor of mineralogy). Professor William P. Trowbridge, as head of the engineering department, gave instruction chiefly in civil engineering, hydraulics and resistance of materials; to which he added a rudimentary course in mine engineering. Associated with him were Adjunct-Professor Henry S. Munroe, who lectured on mining and ore-dressing and Adjunct-Professor Frederick R. Hutton, who had recently begun to develop lecture courses in mechanical engineering. William Pistor, who, in our first and second years, had charge of the free-hand and mechanical drawing, descriptive geometry and graphics, was succeeded by A. D. Churchill and James L. Greenleaf, the latter also lecturing on engineering constructions.

John S. Newberry was professor of geology and botany and taught with an authority based upon wide field observation, as well as knowledge of the books. He was assisted by Doctor Nathaniel Lord Britton, now so well known as a botanist and as the director of the Bronx Botanical Gardens. Under Professor William G. Peck we had our mechanics. No one can forget the excellent teacher who made that subject a genuine pleasure to all earnest students. Professor Ogden N. Rood, with Ganot's Physics as the text-book, gave us an insight into the subjects of heat, light, sound and electricity, that has been of lasting benefit. Astronomy and geodesy were taught by John Krom Rees, afterward professor of those subjects. William R. Ware, professor of architecture, was rapidly perfecting the organization of his new department and lectured on a wide range of subjects: the elements of architecture, mediæval and Greek architectural history, the decorative arts, history of ornament, architectural design and specifications. Our geometry, trigonometry, analytics and calculus were studied with Professor Van Amringe, assisted by instructor Jasper T. Goodwin. Not many of us loved these subjects for their own sakes, but we all worked diligently under an abiding sense of obligation. Fate loomed large, and the insistent nature of the motive force left no comfort for the shirker or the incompetent. Finally, instructors Jules E. Loiseau and Frederick Stengel taught us the modicum of French and German that then formed part of the course of study; but I fear we did not take the language requirements with becoming seriousness.

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* The accompanying photograph contains the portraits of President Barnard and of all the members of the faculty of professorial rank in 1883, except Professor Peck.

The Summer School of Mining, which had been established in 1877 by Professor Munroe, constituted in that period, as it does now, a most useful feature of the curriculum. Eighty-three's "miners" spent six weeks at several of the New Jersey magnetic iron mines and some of the anthracite collieries of Luzerne County, Pennsylvania.* This field work in mining now occupies eight weeks. Though the idea may have been suggested by the vacation work done in a rather desultory way by the students of the Ecole des Mines, of Paris, and some other continental schools, to Professor Munroe must be accorded the distinction of first perceiving the importance of introducing the study of field practice on definite lines and of organizing it in an efficient manner. The necessary privileges for carrying on the course of study are secured in advance at some suitable mine or group of mines. The work consists of careful note-taking and sketching, systematized in such a way as to cultivate the habit of accurate observation. Many other mining schools quickly followed Professor Munroe's lead in this new departure. Professor Munroe also organized, and for years had charge of, the field instruction in surveying. But in 1883 there was no "Camp Columbia," with its large staff and equipment, and six hundred acres of area. The instruction in the use and adjustment of the instruments, the preliminary pacing, taping, transit and level work, traverse and plane-table (topographical) surveys, were carried on partly in vacant lots on the upper west side of the city and partly in the northerly end of Central Park. A railroad line was laid out in Riverside Park (then unfinished), from about 74th street to a point nearly abreast of the Grant monument. All of this work was done in afternoons, during the fall and spring of the third year. At the present time, each student in mining, metallurgical and civil engineering has from thirteen to nineteen weeks of field surveying in the summer vacations; students of other courses have five weeks.

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* The results of the summer work were written up in the form of a "memoir," but that requirement was discontinued in 1887.

The lectures in mechanical engineering by Professor Hutton afforded an excellent introduction to that subject, notwithstanding the lack of laboratory facilities. I venture to say that every man in Eighty-three profited by and remembers with pleasure the lectures on engines and boilers and properties of materials. These courses were supplemented by a month's steady summer work, under Professor Hutton's direction, in note-taking and sketching at the Quintard, Roach and Delamater Iron Works and machine shops. The work was required of all engineering students in the second vacation and was of great value. In the first vacation there was no systematic study of any kind; we were required only to make a few free-hand sketches, including some subjects of a mechanical engineering nature.

As the number of students increased, the originally homogeneous organization of the School gradually changed. The courses of study became more diversified and specialized, and finally, in 1896, the schools of engineering and of chemistry were definitely set off from the School of Mines; the whole forming the present group of technical schools under the faculty of applied science.* At the

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* In recent years, to the regret of every old graduate, these changed conditions have led to the adoption of the odious suffix "Science," to designate a student in any of the allied schools. I would suggest that this term be discarded, and that a student be known as: "Smith (Mines)," "Jones (Engineering)," or "Robinson (Chemistry)." The name "School of Mines," furthermore, is too valuable an asset to be shuffled out of existence, even in the concise and familiar university idiom.

SCHEME OF ATTENDANCE.

First Session. October 2, 1882, to January 26, 1883.

For First Class.

HOURS.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.
10 to 11	Sec. A. Mathematics. Third Division French. Fourth Division German.	Sec. A. Mathematics. Third Division German. Fourth Division French.	Mathematics, Prof. VAN AMRINGE.	Lecture on Drawing, Mr. CHURCHILL.	Sec. B. Mathematics. Second Division French. First Division German.
11 to 12	Second Division French. First Division German.	Third Division French. Fourth Division German.	Chemistry, Prof. CHANDLER.	Third Division German. Fourth Division French.	Fourth Division French. Third Division German.
12 to 1	First Division French. Second Division German.	Physics, Prof. ROOD.	Physics, Prof. ROOD.	Sec. B. Mathematics. First Division French. Second Division German.	Physics, Prof. ROOD.
1 to 2	Chemistry, Prof. CHANDLER.	Sec. B. Mathematics. First Division French. Second Division German.	Second Division French. First Division German.	Chemistry, Prof. CHANDLER.	Sec. A. Mathematics. Third Division French. Fourth Division German.

For Second Class.

HOURS.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.
10 to 11	Descriptive Geometry, Mr. CHURCHILL.	Descriptive Geometry, Mr. CHURCHILL.	Second Division German. First Division French.	First Division German. Second Division French. Sec. B. Mathematics.	Mathematics, Prof. VAN AMRINGE.
11 to 12	Mathematics, Prof. VAN AMRINGE.	Mathematics, Prof. VAN AMRINGE.	Zoology, Prof. NEWBERRY. Greek Arch. History, Prof. WARE.	Sec. A. Mathematics, Prof. VAN AMRINGE.	Chemistry, Prof. CHANDLER.
12 to 1	Chemistry, Prof. CHANDLER.	Elements of Architecture, Prof. WARE. Qualitative Analysis, Dr. WELLS.	Chemistry, Prof. CHANDLER.	Botany, Prof. NEWBERRY.	First Division French. Second Division German.
1 to 2	Second Division French. First Division German.	Blowpipe Analysis, Prof. EGLESTON. Elements of Architecture, Prof. WARE.	Blowpipe Analysis, Prof. EGLESTON. Greek Arch. History, Prof. WARE.	Third Division German. Fourth Division French.	Qualitative Analysis, Dr. WELLS.
2 to 5	Third Division French. Fourth Division German.		Third Division French. Fourth Division German.		Fourth Division French. Third Division German.

For Third Class.

HOURS.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.
10 to 11	Metallurgy, Prof. EGLESTON.	Physics, Prof. ROOD. Mediæval History, Prof. WARE.	Metallurgy, Prof. EGLESTON. The Decorative Arts, Prof. WARE.	Physics, Prof. ROOD. Specifications, Prof. WARE.	Engineering, Prof. TROWBRIDGE.
11 to 12	Machinery, Adj.-Prof. HUTTON.	Mineralogy, Prof. EGLESTON. History of Ornament, Prof. WARE.	Engineering, Prof. TROWBRIDGE.	Applied Chemistry, Prof. CHANDLER.	Mechanics, Prof. PECK.
12 to 1	Mechanics, Prof. PECK.	Surveying, Adj.-Prof. MUNROE.	Mediæval History, Prof. WARE. Surveying, Adj.-Prof. MUNROE.	Architectural Design, Prof. WARE. Stoichiometry, Dr. WALLER. Astronomy and Geodesy, Mr. REES.	Applied Chemistry, Prof. CHANDLER.
1 to 2	Mineralogy, Prof. EGLESTON.	Geology, Prof. NEWBERRY.	Geology, Prof. NEWBERRY.	Geology, Prof. NEWBERRY.	Machinery, Adj.-Prof. HUTTON. Quantitative Analysis, Dr. WALLER.
2 to 5					Astronomy and Geodesy, Mr. REES.

For Fourth Class.

HOURS.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.
10 to 11	Practical Mining, Adj.-Prof. MUNROE. Civil Engineering, Adj.-Prof. HUTTON.	Engineering, Prof. TROWBRIDGE.	Civil Engineering, Prof. TROWBRIDGE.	Economic Geology, Prof. NEWBERRY.	Mechanical Engineering, Adj.-Prof. HUTTON.
11 to 12	Economic Geology, Prof. NEWBERRY.	Practical Mining, Adj.-Prof. MUNROE. Civil Engineering, Mr. GREENLEAF.	Mechanical Engineering, Adj.-Prof. HUTTON.	Mechanical Engineering, Adj.-Prof. HUTTON.	Practical Mining, Adj.-Prof. MUNROE. Civil Engineering, Mr. GREENLEAF.
12 to 1	Metallurgy, Prof. EGLESTON. Civil Engineering, Prof. TROWBRIDGE.	Civil Engineering, Adj.-Prof. HUTTON. Assaying, Dr. RICKETTS.	Metallurgy, Prof. EGLESTON. Civil Engineering, Adj.-Prof. HUTTON.	Engineering, Prof. TROWBRIDGE. Applied Chemistry, Prof. CHANDLER.	Assaying, Dr. RICKETTS. Astronomy and Geodesy, Mr. REES.
1 to 2	Properties of Material, Adj.-Prof. HUTTON.	Engineering, Prof. TROWBRIDGE.	Engineering, Prof. TROWBRIDGE. Applied Chemistry, Prof. CHANDLER.	Engineering, Prof. TROWBRIDGE	Engineering, Prof. TROWBRIDGE.

☞ Hours not occupied by Lectures are devoted to Laboratory Practice in Chemical Analysis and Assaying, under Professor Chandler, assisted by Mr. Julien, Dr. Waller, Dr. Ricketts, and Dr. Wells; or to work in the Blow-pipe Laboratory and Mineralogical Collections, under Professor Egleston, assisted by Mr. Moses; or to practical work in Surveying and Drawing, under the direction of Professor Trowbridge, the work in Surveying being under Adj.-Professor Munroe, and the Drawing under Mr. Churchill and Mr. Greenleaf; and Machine Construction under Adj.-Professor Hutton.

SCHEME OF ATTENDANCE.

SECOND SESSION. FEBRUARY 8, 1883, TO MAY 18, 1883.

FOR FIRST CLASS.

HOURS.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.
10 to 11	Sec. A. Mathematics. Third Division French. Fourth Division German.	Sec. A. Mathematics. Third Division German. Fourth Division French.	Mathematics, Prof. VAN AMRINGE.	Qualitative Analysis, Dr. WELLS.	Sec. B. Mathematics. Second Division French. First Division German.
11 to 12	Second Division French. First Division German.	Third Division French. Fourth Division German.	Qualitative Analysis, Dr. WELLS.	Third Division German. Fourth Division French.	Fourth Division French. Third Division German.
12 to 1	First Division French. Second Division German.	Physics, Prof. ROOD.	Physics, Prof. ROOD.	Sec. B. Mathematics. First Division French. Second Division German.	Physics, Prof. ROOD.
1 to 2	Chemistry, Prof. CHANDLER.	Sec. B. Mathematics. First Division French. Second Division German.	Second Division French. First Division German.	Chemistry, Prof. CHANDLER.	Sec. A. Mathematics. Third Division French. Fourth Division German.
2 to 4	Laboratory, Dr. WELLS.	Laboratory, Dr. WELLS.	Laboratory, Dr. WELLS.	Laboratory, Dr. WELLS.	Laboratory, Dr. WELLS.

FOR SECOND CLASS.

10 to 11	Graphics, Mr. CHURCHILL.	Graphics, Mr. CHURCHILL.	Zoology, Prof. NEWBERRY.	First Division German. Second Division French. Sec. B. Mathematics.	Mathematics, Prof. VAN AMRINGE.
11 to 12	Mathematics, Prof. VAN AMRINGE.	Mathematics, Prof. VAN AMRINGE.	Greek Arch. History, Prof. WARE. Second Division German. First Division French.	Sec. A. Mathematics, Prof. VAN AMRINGE.	Chemistry, Prof. CHANDLER.
12 to 1	Chemistry, Prof. CHANDLER.	Elements of Architecture, Prof. WARE. Quantitative Analysis, Dr. WALLER.	Chemistry, Prof. CHANDLER.	Botany, Prof. NEWBERRY.	Architecture, Prof. WARE. First Division French. Second Division German.
1 to 2	Second Division French. First Division German.	Blowpipe Analysis, Prof. EGLESTON. Elements of Architecture, Prof. WARE.	Blowpipe Analysis, Prof. EGLESTON. Greek Arch. History, Prof. WARE.	Third Division German. Fourth Division French.	Stoichiometry, Dr. WALLER.
2 to 3	Third Division French. Fourth Division German.		Third Division French. Fourth Division German.		Fourth Division French. Third Division German.

FOR THIRD CLASS.

10 to 11	Metallurgy, Prof. EGLESTON.	Physics, Prof. ROOD. Mediæval History, Prof. WARE.	Metallurgy, Prof. EGLESTON. History of Ornament, Prof. WARE.	Physics, Prof. ROOD. Specifications, Prof. WARE.	Engineering, Prof. TROWBRIDGE.
11 to 12	Machinery, Adj.-Prof. HUTTON.	Mineralogy, Prof. EGLESTON. The Decorative Arts, Prof. WARE.	Engineering, Prof. TROWBRIDGE.	Applied Chemistry, Prof. CHANDLER.	Mechanics, Prof. PECK.
12 to 1	Mechanics, Prof. PECK.	Practical Mining, Adj.-Prof. MUNROE.	Mediæval History, Prof. WARE. Practical Mining, Adj.-Prof. MUNROE.	Architectural Design, Prof. WARE. Properties of Material, Adj.-Prof. HUTTON.	Applied Chemistry, Prof. CHANDLER.
1 to 2	Mineralogy, Prof. EGLESTON.	Geology, Prof. NEWBERRY.	Geology, Prof. NEWBERRY.	Geology, Prof. NEWBERRY.	Geodesy, Adj.-Prof. REES.
2 to 3	Geodesy, Adj.-Prof. REES.				

FOR FOURTH CLASS.

10 to 11	Ore Dressing, Adj.-Prof. MUNROE. Geodesy, Adj.-Prof. REES.	Engineering, Prof. TROWBRIDGE.	Civil Engineering, Prof. TROWBRIDGE.	Economic Geology, Prof. NEWBERRY.	Economic Geology, Prof. NEWBERRY.
11 to 12	Economic Geology, Prof. NEWBERRY.	Ore Dressing, Adj.-Prof. MUNROE. Civil Engineering, Adj.-Prof. HUTTON.	Mechanical Engineering, Adj.-Prof. HUTTON.	Properties of Material, Adj.-Prof. HUTTON.	Ore Dressing, Adj.-Prof. MUNROE. Civil Engineering, Mr. GREENLEAF.
12 to 1	Metallurgy, Prof. EGLESTON. Civil Engineering, Prof. TROWBRIDGE.	Mechanical Engineering, Adj.-Prof. HUTTON.	Metallurgy, Prof. EGLESTON. Civil Engineering, Adj.-Prof. HUTTON.	Engineering, Prof. TROWBRIDGE. Applied Chemistry, Prof. CHANDLER.	Mechanical Engineering, Adj.-Prof. HUTTON.
1 to 2	Properties of Material, Adj.-Prof. HUTTON.	Engineering, Prof. TROWBRIDGE.	Mining Engineering, Prof. TROWBRIDGE. Applied Chemistry, Prof. CHANDLER.	Engineering, Prof. TROWBRIDGE.	Mining Engineering, Prof. TROWBRIDGE.

☞ Hours not occupied by Lectures are devoted to Laboratory Practice in Chemical Analysis and Assaying, under Professor HANDLER, assisted by Dr. WALLER, Dr. RICKETTS, and Dr. WELLS; or to work in the Blow-pipe Laboratory and Mineralogical Collecons, under Professor EGLESTON, assisted by Mr. MOSES; or to practical work in Surveying and Drawing, under the direction of Professor ROWBRIDGE, the work in Surveying being under Adj.-Professor MUNROE, and the Drawing under Mr. CHURCHILL and Engineering Contructions under Mr. GREENLEAF.

same time the department of architecture became the School of Architecture and later (1902) a division of the School of Fine Arts.

A comparison of the schedules of lectures, recitations and laboratory work of the year 1882–3 with those of the present day illustrates clearly the specialization which the curriculum has undergone in the past quarter century. It must be remembered, however, that the technical schools are in large degree independent of one another, and also that a number of the subjects now taught were unknown in 1883: for example, nearly all of those given by the department of electrical engineering, many of the courses in civil and mechanical engineering and some in metallurgy. As a corollary, it might be maintained with reason that it was easier in 1883 to become an engineer than it is at the present time. But, though the training was more general in its nature twenty-five years ago, the students were well grounded in mathematics and the natural sciences. Many of the applications of these subjects were left to be learned and developed subsequently in that best of laboratories—field practice.

For a few years after the establishment of the School the classes were small, but about 1872 they began to increase in size. In the year 1882–3 the total number of students in all courses was 276, of whom 155 were mining engineers, 44 civil engineers, 50 chemists and 18 architects. Besides these were 8 candidates for the degree of doctor of philosophy and 1 special student. There were no students of architecture in the fourth class, that course having been established in 1881, as already noted. In the same year 21 students graduated in mining, 7 in civil engineering and 6 in chemistry.* Up to 1887 the mining students were generally in the majority, as the other courses (except civil engineering and chemistry) had not yet been organized. There were no courses leading to the degrees of mechanical engineer and electrical engineer. The first electrical engineering laboratory in the School of Mines was fitted up in 1889 and the first degree in that course (which was in the beginning a post-graduate course of two years) was conferred in 1891. In mechanical engineering the first degrees were dated 1901, though a number of subjects in that branch had long been given to students of other departments.

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*As Columbia possessed no large hall at that time, the Commencement exercises were held in the old Academy of Music, corner of 14th street and Irving place.

The growth of the present group of technical schools is shown by the following statistics for the year 1908–9: Total number of students in all departments, 704, of which 228 were mining engineers, 19 metallurgists, 46 chemists and chemical engineers, 146 civil engineers, 94 electrical engineers, 108 mechanical engineers, 21 candidates for the higher degrees, 20 non-matriculated or special students and 22 students from the College, taking the six-year course.* To complete the comparison with the year 1882–3, 117 students in architecture should be included, making a total in 1908–9 of 821.

Possessing in 1883 the limited material facilities to which reference has been made and the relatively small staff of teachers, what are the reasons for the reputation enjoyed then, as now, by the School of Mines? There were well-appointed chemical laboratories for qualitative, quantitative and organic analysis, assaying and blowpipe analysis. But there was no mechanical engineering laboratory and only a partially developed course in that subject. Electrical engineering was non-existent, at least so far as concerns its applications for the transmission of power, nor was there any undergraduate laboratory work in physics. Free-hand and mechanical drafting and the elements of machine design were taught with some degree of thoroughness. An attempt had been made, without much success, to establish an ore-dressing laboratory, but systematic instruction in the practice of the art was not begun until the University moved to its new site in 1897. In some respects the School of Mines was still far behind the best European schools in material aids to an engineering training.

I think the reasons for the degree of success attained by the School are to be found chiefly in the character, individuality and devoted service of the men who established and cherished it, and who were so prominent in their several departments of instruction during the first twenty years of its existence. A large part of the students' inspiration and stimulus to efficient work comes from the man in the teacher. Upon the average of mediocre students—a majority in every class—the genuine teacher exercises a subtle influence upon ideals and ideas, that arouses ambition and a wholesome conviction of responsibility; and his influence is valuable also in tending to an early elimination of the incompetent, who fail to reach a proper attitude towards their work, mainly because they are unfitted for it. Another reason—in part a result of the above—lies in the good repute and standing of the body of graduates practising their professions in this country and abroad. By their general professional success they have impressed on the communities in which they have labored the reputation of the school that afforded them their training. Civil engineers and chemists of 1883 and other classes are not less proud of their *alma mater* than the mining engineers.

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* Under the present regulations, students of the first class are not required to announce the courses they intend to take. The total number for each department, as above, is therefore, estimated by including its probable proportion of the 206 members of the first class; basing the division on the numbers taking the several courses in the three upper classes.

Of the faculty of 1883 few remain: Chandler, one of the founders; Van Amringe, who joined the teaching staff soon after the organization of the School, and Munroe, the present head of the department of mining. Some have resigned, but many of those whose strong personalities can never be forgotten—Egleston, Trowbridge, Newberry, Rood, Peck, Rees—have passed away.

ROBERT PEELE

THE STUDENT AS AN INVESTOR*

ALL courses of study are investments—primarily of the student's time, which might otherwise be turned to other purposes, and, secondarily, of money. For the majority of men who carry their work beyond the bachelor's degree, not only the time but the money must be paid out of principal, and the financial principal which the right kind of man is willing to draw upon is likely to be small. There may be younger children to be educated, or modest luxuries that the father and mother should no longer deny themselves. When such a man has decided that he owes it to himself and to his future to take the time necessary for further training, he recognizes that he owes it to others to make the most economic investment possible, so far as further drafts on the family funds are concerned. Unfortunately, he too often takes this to mean that he must get his training at the lowest possible outlay of cash, and resigns himself to the cheap course of a proprietary law or medical school in a small city, or in some graduate department whose main cost to the institution supporting it is doubtless the paper and ink consumed by the grandiose announcement in the catalogue.

But the initial cost is only one of three factors to be considered, and perhaps the least important. The other two factors are the intrinsic value of what is received as a result of the expenditure and the opportunities open to a competent man to make contributions to the credit side of his ledger during his course of study. When these three elements are all taken into consideration, it will be clear that the best investment for the man worthy of advanced training at all will be found in the great universities, and among them in the urban rather than in the rural or suburban; and further, that if he has only himself to look after, a man can make this investment without undue hardship. The same considerations apply to the undergraduate course, particularly in the case of students of the mature, self-reliant type. Family or other sentimental reasons, however, often control the choice of a college which are not applied in deciding upon an institution for advanced training.

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* Reprinted from the *Evening Post,* New York, Saturday, August 7, 1909.

Entirely apart from what is to be had for the outlay, the actual cost of residence at a city university is less than is popularly supposed. Every year Columbia students who do not look as if they had been starved in mind or body report a total expenditure for the academic year of less than five hundred dollars. A small room in the dormitories costs one hundred dollars. In boarding houses within a few minutes' walk, rooms may be had for less. An inexpensive and pleasant manner of life is for five or six men to rent an apartment together and keep house, turn about. A man who is not above keeping an eye on the bargain sales which the great department stores hold for advertising purposes can get his clothes and other furnishings at an absurdly low figure. Through the university he may receive free medical advice, and may meet other emergencies at a low cost or none at all.

In addition to loan funds and provision in special cases for payment by instalments, the universities make generous provision for fellowships and scholarships. The question of scholarships, which ordinarily cover tuition only, is, however, of secondary importance. The proportion of tuition charges to total expenses is comparatively small, and as the applicants far outnumber the appointments, the latter are likely to go to second and third year men whose merits are known to the appointing bodies. Generally speaking, a man who can "make it go" with a scholarship can make it go without one, though the appointment is undoubtedly a great help in setting free time to be used in study and relaxation and money for the purchase of books and other desirable acquisitions.

The most important factor, however, is that of the value to be received. The years immediately following the college course make, in their way, quite as crucial a period in a man's life as the preceding undergraduate years. It is then that the man of intellectual bent is likely to find himself, and it is of the greatest importance that these years be spent in the right environment. So far as the direct facilities for work in his chosen study are concerned, it is almost axiomatic that the best advantages will be found in the great universities. If a man wishes to see some of the practical reasons for this, let him study the financial and other statistical tables in the reports of the Carnegie Foundation, which are available in any large public or college library.

Of course, there may be special governing factors in individual cases. For example, some preeminent leader in his particular branch of study may overbalance other factors. A German student of philosophy in Kant's time would have been a fool to go to one of the larger universities instead of to Königsberg; the philological student who went to Marsh, at Lafayette, or the student of political science who sat under Lieber, at South Carolina, was likely to be making the best possible educational investment in his particular case.

In general, however, the teachers best worth listening to are drawn from all over the country to the large universities, and with rare exceptions stay there during their prime. These exceptions themselves indicate the quality of the university teaching bodies. From a single department at Columbia, the presidencies of the Carnegie Institution, Dartmouth and the Massachusetts Institute have been filled recently, and from a single department at Princeton the presidencies of the New York City College, Williams and Princeton herself.

Each separate department has also a distinct advantage from having always on tap experts in widely different branches, any one of whom may be in a position to throw invaluable light on a problem requiring his special knowledge. A Latin scholar, for instance, may learn a good deal from a civil engineer about Roman roads and aqueducts.

The teaching staff of each university is reinforced by its treasures of books and scientific collections and apparatus; and, lying outside its direct resources, but closely bound to the university by formal and informal ties, is the vast scientific and scholarly wealth of the city. New York and the other large cities are only just beginning to realize their educational responsibilities. Among the signs of the times here are the clinical clerkships in the hospitals now being opened to medical students, the generous attitude of the museums and the cooperation of practising architects and engineers. There are practically no exceptions to the rule that for the man who is competent to use it profitably, any scholarly tool which he needs can be made available. This applies not only to the public or semi-public facilities, but to private libraries and collections, and even, through the help of some academic intermediary, to the unpublished contents of the brain of the final authority upon the point at issue.

In addition to concrete advantages, there is the question of the general charging of the intellectual atmosphere. It may be intangible, but it is a real stimulus that comes to university teacher and student alike from working within hailing distance of such institutions as the New York Bar Association, the Harvey Society and the Rockefeller Institute in medicine, the great engineering societies, the Architectural League, or the Hispanic Society, to say nothing of the great public libraries, museums and galleries. A healthy and friendly rivalry exists among the different university departments and with neighboring schools. There is not one medical school in New York, but six, and the same general condition is true with respect to law, education and engineering.

Then, the whole atmosphere of the city is one of intense application. It is almost impossible either for teacher or student to loaf or even to maunder, and as a result the departments which suffer from dry rot themselves and are likely to infect their students are few.

This does not mean that a student, even a student working his way, has no time for leisure. If he knows how to plan his day, he has ample opportunity for physical exercise and for other relaxations, and in a great city he may make his relaxation a vital part of his education. The poor man stands on practically the same footing as the rich, for an expenditure of a dollar a week, chiefly for carfare, will give him the keys of the city. Free tickets for plays or concerts that are a little above the heads of the public and need some "papering," are constantly being sent to city universities and may be had for the asking. If these do not coincide with a man's tastes, there is always the gallery of the gods, and a man can hear the opera and get fifty cents to boot if he will carry a spear as a "supe."

It is not an idle curiosity which moves us to see and hear the people who are making history, and the important public meetings in a city offer an opportunity which should not be neglected. At the Grover Cleveland memorial meeting, held in New York last spring, to name but one, the speakers included the President, the Chief Justice of the Supreme Court, the Governor and the Mayor. Then there are the great preachers and other speakers, and distinguished visitors of all kinds. In the course of the year many of these may be heard at the university. At Columbia there were two hundred and two special lectures last year. Other public men may be observed as occasion offers, as may also the more elusive personalities, such as Mr. Rockefeller and Mr. Harriman, the Big Fellow (Tim Sullivan), and "Mr. Dooley," by any one who, in President Butler's phrase, has "the art of being well informed"—which, like other useful arts, improves with practice.

There is, too, another kind of information which can not be gained from the printed page, certain things which, to be known and appreciated, must be seen or heard—or smelled. Any great city is full of such sources of information. No man can help coming into contact with some of them, and the wise man who makes a little preliminary inquiry, and whose "quiet eye" is alert to reap the harvest of which Wordsworth speaks, can make opportunity to experience the best of them; and it must be remembered that they make up an astonishingly large part of the educated man's equipment. The word picturesque is dreadfully overworked and misapplied, but it does stand for something real and valuable, and the picturesque quality of a great city is one of its most potent assets.

The vital issues of the coming years in our land are destined to be on social questions, and much that a man reads or hears in the future will be thrown into focus, if in his student days he takes advantage of such free shows as Ellis Island, Cooper Union, the Stock Exchange, Central Park on a May afternoon, the departure of the Mauretania, or the tea-room of the newest hotel. For the benefit of him who has never been abroad or who wishes to refresh his memories, there are whole sections of Europe that have been imported *en bloc*. He can see a real Italian festa, or go to the marionette theater where the best seat is ten cents, or to a Russian church service. He can dine inexpensively in France, Germany, Greece, Hungary, Syria—or Bohemia. The advertised Bohemia, by the way, is but a dreary and tawdry region, but for the man who knows where to look there are real Bohemian oases in plenty.

These excursions need not be made alone. Apart from the friendship to be made in class-room and library, in the dormitory or commons or fraternity house, there are sure to be earlier friends or acquaintances at hand. An Amherst man who came to Columbia, for example, last year would have found thirty-two fellow collegians already enrolled; an Oberlin man would have found fourteen. There were twenty-three students from the state of North Carolina, fifty-five from Indiana, and forty-one from California. In the city at large there is sure to be some organization of his fellow alumni and of his fraternity, and the men in these organizations appreciate the opportunity to offer the companionship and counsel of elder brothers. Nor need he leave the university to broaden his horizon. At the end of the day's work he can smoke a pipe before the dormitory fire with a man from South Africa or China or Peru, who will give him a wealth of new ideas.

The whole question of education for the wise use of leisure is too often overlooked in this country. Success in a business or professional career is a barren triumph, if, when the means in time and money to gratify a man's individual tastes have come, he finds himself without intellectual or æsthetic tastes to gratify—as many a college student who is today devoting all his spare moments to the mastery of the highly technical but profitless gossip and statistics of the side-lines will come to realize.

Every man, and above all, every man who is preparing for a profession, should give himself some opportunity to develop and train not only the intellectual but the æsthetic side of his nature. It is no sign of virility for a man to be able to enjoy no music but rag-time and Moody and Sankey; no pictures but the Sunday supplements and art gift-books, and no drama but the productions of the Theater Trust. A man who neglects the opportunities which he may have in the course of his professional study is shutting, probably forever, the gates to the great havens which from the beginning of time men have used as refuges from the press of daily circumstance. It is likely also that he is limiting the bonds of companionship with his wife that is to be, for, in this matter, at any rate, the woman of the United States is much wiser than her brother.

Of course New York and the other large cities are not the only places where the soul may be fed, but these cities are the inevitable centers and storehouses of those things which nourish it. A busy student must take his chance for such opportunities. In the small town, the loan exhibition or the symphony concert may come when he can not take advantage of it. In a great city, some opportunity for development is always awaiting his leisure. Last year, for instance, a subway trip of eight minutes took hundreds to the Sorolla paintings at the Hispanic Society and the German Sängerfest, with its chorus of seven thousand voices, was to be enjoyed a little later for fifty cents. A few experiences like these give a man standards of what is good in art and music that will influence his whole life.

There are certain questions of dress and deportment which are absorbed through the pores of a student in a metropolitan city. Intrinsically they are unimportant—"a man's a man for a' that"—but one who ignores them may miss the chance to show what is in him. A man of first-rate intellectual power is not infrequently passed over because he unwittingly errs in appearance or manner on the side either of a certain scrubbiness or of an even more unfortunate "nobbiness." Accepted social conventions, after all, are like office systems. They may become rigid bonds for the little man, but they save the time and attention of the big man, and leave him free to exercise his individuality and live his life.

The third element is opportunity to earn money while in residence. In the first place, it has been amply proved that a man of good presence, ability and gumption can work his way at a city university. The annual earnings at Columbia, as reported by the students themselves, have averaged more than one hundred thousand dollars for the last three years. Indeed, the danger in many cases is that a man will be tempted to neglect his academic duties in order to make more money than he really needs. In the second place, he can often pay his expenses in whole or in large part by occupations which add to his scholarly equipment or which serve as a pleasant foil to his primary duties. Sometimes, if he be fortunate, his work has both of these desirable qualities.

There are plenty of opportunities for a man to teach his own subject. For example, fifty-six candidates for our higher degrees are on the staff of the College of the City of New York. The night schools, too, are largely manned by our graduate and professional students. The medical student often gets interesting as well as profitable cases of expert nursing. The sociologist can get settlement work. Last year a number of students of anthropology worked their way by collecting data for a report upon ethnic conditions in New York. A geological student made an elaborate and remunerative survey and map of a nearby country estate. There are bibliographical and museum and architectural and engineering jobs for the men who have the requisite training.

The valedictorian of this year's class in Columbia College was a Customs House inspector; a friend of mine served as a policeman during his law course; another, now in the engineering schools, is in the Revenue cutter service. Many men go into newspaper work, either as university reporters for the city papers or to write the New York letter to the newspaper at home. Others "lecture" on Seeing New York omnibuses. A man with a good voice can often sing his way. Several men have paid their expenses by organizing after-school classes of the little children of the rich, and opportunities to be handsomely paid for a summer trip to Europe are not infrequent.

In addition to the steady positions, incidental jobs are constantly turning up, which put a little—sometimes a good deal—of ready money into a man's pocket. These windfalls often make possible the purchase of some particular book, or a trip to Washington or Boston, or a subscription to the Ring, or to a Shakspere revival—expenditures that have all the fun of being extravagances and are at the same time wise investments.

Each year there are many calls for proctors from the University or the Civil Service Commission. There is paid election work of various kinds. Last winter, when Commissioner Edwards was cleaning up the Street Cleaning Department, twenty Columbia men were employed as snow-removal inspectors, and some of them had an interesting time of it. Men get work as lay readers or preachers, or, paid to return to nature, trim trees in the springtime. Others serve as artists' models, or write valentines, and even sonnets, to order.

What has been said applies to the first-rate man. The inferior man should not take up advanced work in the first place, and if he does, he cannot profit by the opportunities which the city offers. The intellectual pace is too swift, and if there are many opportunities for earning money, there are many more men of mediocre ability who are on the lookout for them.

Perhaps the wisest thing for a man in some given case may be to put off his advanced work for a year and save money while teaching or pursuing the uninspiring but lucrative art of life insurance or other canvassing. This would apply especially to one who is looking forward to medicine or engineering, for the long laboratory hours in these courses make it distinctly harder for the men to earn money while they are in residence.

But the man of intellectual ability and health, with a sense of humor and a sense of responsibility—both are necessary—who has even a small working capital and has no one but himself to feed and clothe, may look forward, with as much certainty as he can to anything in this uncertain world, to the opportunity to obtain the best possible equipment for his life work in a metropolitan university, and, at the close of his course, to a favorable opportunity for starting upon it.

FREDERICK P. KEPPEL

FOREIGN UNIVERSITY CELEBRATIONS

1. The Darwin Centenary Celebration at Cambridge

THE centenary of Darwin's birth and the fiftieth anniversary of the Origin of Species have been celebrated in many countries during the past twelvemonth, but it is safe to say that no other commemoration has equaled in interest or significance that which was held at Cambridge during the last week in June. It was fitting that the greatest of the celebrations in Darwin's honor should be held in the land of his birth and at his own university; and it was no doubt the general recognition of this that brought together so remarkable a body of men at Cambridge. Very many of the foremost leaders of biological science from every civilized land were present, either as the official delegates of universities, learned societies and institutions, or as invited guests; and it may be doubted whether such a gathering has been seen before or is likely to take place again. The university authorities, on their part, were singularly fortunate in planning and carrying out a program which in dignity and impressiveness of ceremonial and in brilliancy of social entertainment was in every way worthy of the great occasion.

Those who know the English universities need not be told how well adapted they are for such festivities. The ancient halls and beautiful quadrangles of Cambridge formed an ideal setting for the celebration in both its serious and its lighter aspects. In the Senate House there were simple but imposing ceremonies, to which the varied academic costumes from many countries lent an aspect of gorgeous pageantry. In the gardens of the colleges, illuminated at night with innumerable lamps, there were charming informal garden-parties, where guests and hosts met to renew old acquaintance and make new. And the company came from the ends of the world. Among the hundreds of guests and delegates were representatives from Japan, Java, India, Ceylon, New Zealand, Australia, South Africa, Egypt and South America, as well as from every

European country, the United States and Canada. The spectacle of such a company of eminent men gathered together in Darwin's honor, representing not only every branch of biology, but many other sciences, was something never to be forgotten. One asked oneself if it were really possible that only a few years ago the theory of organic evolution was the subject of acrimonious controversy and Darwin the object of violent attack. One wondered what Darwin himself would have thought of it all. We may be fairly sure that he would have been filled with astonishment, perhaps even with dismay; and probably he would have lost no time in escaping to the solitude of Down to resume his quiet studies on orchids and earthworms.

The celebration opened with a brilliant general reception at the Fitz William Museum on the evening of June 22, at which the delegates and guests were received by the Chancellor of the University, Lord Rayleigh, and by Lady Rayleigh. The formal exercises began the following morning with a general convocation in the Senate House, at which an opening address of welcome by Lord Rayleigh was followed by the presentation of inscribed addresses to the university by the official delegates, and by a series of speeches on Darwin's influence on biological science. It was a dramatic scene as the delegates were introduced and came forward, one by one, to present their messages of greeting. First came in succession those from America, Austria-Hungary, Belgium, Denmark, Egypt, France, Greece, Germany, Holland and Italy, after which a longer address was delivered in German by Professor Hertwig, delegate of the Royal Prussian Academy of Sciences, and one in French by Professor Metchnikoff, delegate of the Pasteur Institute in Paris. Next came the delegates from Japan, Norway, Portugal, Russia, Spain, Sweden and Switzerland, followed by a third group including those from the British Colonies and British Isles. Professor Osborn, of New York, delegate of the American Philosophical Society, then made an admirable speech in the course of which he made presentation to Christ's College, on behalf of the American delegates, of a bronze replica of the bust of Darwin recently executed for the American Museum of Natural History. An address by Sir E. Ray Lankester, delegate of the Royal Society of England, closed the session.

In the afternoon a garden party was given in the quadrangles of Christ's College, at which opportunity was given to view the rooms occupied by Darwin as an undergraduate student, a very interesting collection of *Darwiniana* was exhibited, and the engrossed addresses presented in the morning were also on view. In the evening nearly five hundred guests sat down to a banquet at the New Examination Hall, while the ladies, to the number of nearly three hundred, were entertained at dinner at Newnham College. At the banquet speeches were made by Lord Rayleigh, by the former Prime Minister Rt. Hon. Mr. Balfour, by Professors Arrhenius of Stockholm and Poulton of Oxford, and by Mr. William Erasmus Darwin, the eldest son of Charles Darwin. Mr. Darwin, who is said to bear a very striking resemblance to his illustrious father, spoke at some length, and in a most delightful way, of his memories of the family life at Down, and particularly of Darwin's relations with his children. The day ended with another beautiful garden-party at Pembroke College.

The following morning, June 24, was devoted to the conferring of honorary degrees in the Senate House, followed by an address by Sir Archibald Geikie, president of the Royal Society, on Darwin's work as a geologist. The honorary degree of doctor of science was conferred on twenty-one of the delegates, representing France (3), Germany (7), Belgium (1), Holland (1), Russia (1), Austria-Hungary (2), Denmark (1), Switzerland (1), England (1) and America (3). It is said that the university at first planned to confine the honorary degrees to representatives of countries other than England, but in deference to a widely expressed desire an exception was made in favor of Darwin's son and biographer, Mr. Francis Darwin, a distinguished botanist, and president of the British Association for the Advancement of Science. He was greeted with demonstrative and long-continued applause. Certain features of the academic ceremonial were interesting, and even somewhat amusing, to an American university man who witnessed them for the first time. The Latin orations descriptive of the technical achievements of the recipients were recited by the public orator, Dr. Sandys, with a fervor that was much appreciated; and they gained in picturesqueness here and there by a touch of sly humor such as we are hardly accustomed to look for in such productions.

The final event was a garden-party given in the Fellows' Garden of Trinity by the Darwin family, including Mr. William Darwin, Sir George and Lady Darwin, Mr. Francis Darwin and Miss Frances Darwin, Mr. and Mrs. Horace Darwin, Mrs. Litchfield and Miss Darwin. After this many of the guests left for a *conversazione* at the Royal Society in London. On the following day opportunity was given to visit Down and inspect Darwin's house and the gardens and greenhouse where many of his experiments on plants were carried on.

An interesting feature of the celebration were two exhibitions, one in the Old Library of Christ's College, comprising a collection of Darwin's portraits, books and instruments (some of the latter used on the famous expedition of the *Beagle*), and of honors received from scientific and academic bodies. One could not but be struck with the simplicity, indeed the crudity, of the apparatus with which he worked. Even more interesting, if possible, was Darwin's working library, exhibited at the Botany School, to which it has been transferred by Dr. Francis Darwin. Here one may read the marginal notes, written by Darwin more than a half century ago in some of the early works on heredity and the principles of breeding, which reveal how quick and sure was his instinct for significant facts, even when he could not understand their meaning. He was himself destined to discover their meaning in many cases; others always remained to him wholly enigmatical. "How odd!", he writes in the margin of one book; and again on the following page, with added emphasis, *"How odd!"* This refers to a fact that Darwin never comprehended, at that time or afterwards, because it is only intelligible in the light of Mendel's discoveries; and these, made long afterwards, never came to Darwin's knowledge.

A word may be added regarding the beautiful Darwin memorial volume, issued by the University Press in connection with the celebration under the title "Darwinism and modern science." This volume comprises twenty-eight essays by leading authorities, which deal with subjects (to mention but a few) as far apart as the minute structure of cells and nuclei, the movements of plants, the laws of heredity, the genesis of double stars, and the relations of evolution to human society, to modern philosophy, and to religious thought.

"The greatness of a man," says Professor Chamberlin, "is shown in what he is, in what he does, and in what he sets a-doing." Had we no other evidence of Darwin's eminence in each of these ways, enough might be found in the fact that his life and work could have inspired such a volume. It has gradually become clear that Darwin's work, which began with such apparently trivial occupations as the collection of beetles and the minute study of barnacles, was destined to end by setting its impress on every field of human thought, and that it marked a turning point in the history of intellectual progress. The University of Cambridge is heartily to be congratulated on the success with which it has celebrated an historical event of the first magnitude; and those whose good fortune it was to be present will look back upon the days in Cambridge with many pleasant memories.

EDMUND B. WILSON

2. THE CELEBRATION OF THE FIVE HUNDREDTH ANNIVERSARY OF THE UNIVERSITY OF LEIPZIG

The University of Leipzig was the second in the present German Empire to celebrate the five hundredth anniversary of its foundation. In Austria both Prague (founded in 1348) and Vienna (1365) antedate it, in Germany only Heidelberg, whose semi-millenary fell in 1886. The tiny university of Rostock in Mecklenburg will have its turn in 1919, and the next thereafter to celebrate will be Greifswald, in 1956.

In the recent function at Leipzig a standard was set which the successors will find it difficult to reach. Three corporate bodies united to make the festival a noteworthy one: the Royal Saxon Government, the Municipality of Leipzig, and the University; and the King of Saxony showed his keen personal interest by taking part in every ceremony from beginning to end, and finally by giving a noble entertainment at Meissen to some four hundred of the "honorary guests" of the University.

The arrangements were a marvel of completeness from beginning to end, and were carried out not only with military precision but with an unfailing courtesy and a kindliness that were beyond praise. Of course every one present at the ceremonies was either in full military or diplomatic uniform or in the evening dress universally worn in continental Europe at such times, with orders and medals, so that the whole aspect of the audiences was brilliant in the extreme. Yet of strictly academic costumes there were fewer than one would have expected. Not many of the German universities have a system of academic dress, except that the rectors generally wear a richly ornamented gold chain over their shoulders on state occasions, but the rector and deans of the University of Leipzig wore exceedingly handsome robes of velvet trimmed with fur; and some of the delegates from English and French universities were truly gorgeous, notably a Frenchman in a robe of the richest yellow silk and ermine.

The festivities, which I attended as a substitute delegate for Dean Burgess, who was unfortunately prevented by illness from being present, began with the welcoming of the honorary guests in the *Aula* of the University on the evening of July 28, by the Rector. The many presents sent to the University were exhibited, an imposing fresco painting on the wall of the *Aula,* by Max Klinger, was shown for the first time, and an excellent collation served. The gathering was entirely informal, and most enjoyable. Those foreigners who, like myself, had studied in Germany many years before met numerous old friends and made personal acquaintance with many men known to us previously through the community of scholarship and research. While the reception was going on, a great Garden Party was held in the large and beautiful Palm Garden, on the outskirts of the city, with military bands, choruses of men and women singers, and excellent fireworks.

The sequence of formal functions was as follows:

Thursday:—Formal reception of the King at the Railway Station. Service in the University Church. Ceremonies in the Municipal Theater, consisting of addresses by the Rector and the King, and the congratulations presented by the Government, the City of Leipzig, the other universities of Germany, and in succession of those of all parts of the world, and of the Academies of Science and other learned bodies, and concluding with a cantata composed for the occasion and sung by the two great choral societies of the University.—Grand banquet given by the Royal Saxon Government, and garden party, both held at the Palm Garden.

Friday:—Ceremonies in the Great Hall of the University. Presentation by the King of his own portrait-statue to the University. Address by the Rector; matriculation of the King's two younger sons as students; oration by Professor Wundt; announcement of honorary degrees.—Historical procession, carried out chiefly by students, with the aid of about two hundred cavalrymen from the regiments in garrison at Leipzig.—Gala performance in the Municipal Theater, and gala concert in the *Gewandhaus.—Festkommers.*

Saturday:—Royal dinner to specially invited guests, at Meissen.

In spite of the length of the chief ceremonies on Thursday and Friday, they were marked by an elevation of tone and an easy dignity that kept them from being tiresome. To the Rector Magnificus fell the arduous task of making some six or eight addresses and responses, long and short, all of which were excellently well done, and lightened by a facile play of humor. At Thursday's ceremonies the most striking scene was when the rectors of the twenty other German universities in a body, each wearing his great gold chain of office, presented their congratulations through their spokesman, the rector of Heidelberg, Professor Windelband. In the series of brief addresses which followed, the felicitations of the universities of the British Empire were spoken by Professor Mahaffy of Dublin, those of the American universities by President Schurman of Cornell. The most delightful address was made by Professor Chuquet of Paris, whose inimitably Gallic and graceful wit, clothed in the most limpid French, called forth rapturous applause.

A striking example of discipline and endurance was given by the deputations of the *Corps* and other students' associations who formed a guard of honor on the stage. From beginning to end of the ceremony, which lasted three hours and three quarters, they stood erect, without flinching or drooping.

The best part of the Friday ceremony in the *Wandelhalle* (or concourse) of the university, was the noble oration delivered by Professor Wundt. Its general subject was the position and duty of the university in the state, as exemplified by the history and vicissitudes of the German universities, particularly of Leipzig. The oration, received with the liveliest applause, was followed by the announcements, made by the deans of the four faculties, of the honorary degrees conferred. Of the eighty-six in all, five went to the United States: to Theodore Roosevelt, Professors Michelsen of Chicago, Loeb of the University of California, and Burgess and Wilson of Columbia.

After a brief interval, the historical procession began to move. Nearly two thousand people in all, among them more than fifteen hundred students, composed the fifteen groups of which the procession was chiefly made up. The greatest care had been taken to secure historical accuracy of costume, and in most cases the resulting effect was extremely good. Of course fairly free rein had been given the students, and some of the groups were rather broadly comic, among the best being floats representing the *Universitätskarzer* or university prison, and the scene of "Faust" that is laid in *Auerbach's Keller* in Leipzig. Near the head of the procession marched the non-German students many of them wearing their strange and picturesque national costumes, and all together giving an excellent idea of the very cosmopolitan make-up of the university. The women students provided an interesting group, representing Lessing and his theatrical associates and friends, in the years 1746–8. The entire absence of anything tawdry or flashy was most gratifying.

In many ways, however, the most remarkable function of the whole festival was the large *Festkommers,* held on Friday evening in a great building, of very substantial appearance and construction, put up especially for the occasion on public grounds outside the city. Nearly five hundred tables, each for twenty guests, provided places for the ten thousand participants. Every one found at his place a little book, admirably printed, with the words of the songs to be sung and the necessary instructions for taking part in the formalities of beer-drinking on such an imposing scale. A large military band gave the signals for the different exercises by means of fanfares composed for the occasion; and that there might be no mistake, the notes of each one were printed on the program. Here again the King presided, and commanded a *Salamander* in the most orthodox style.

This ended the celebration proper; but on the following evening a Royal dinner of great brilliancy was given to some four hundred persons, mostly delegates from other universities, in the beautiful

Albrechtsburg at Meissen, on the Elbe. The charming old castle, high above the river, gave a noble setting to a most interesting scene; and those who had the good fortune to be there brought away a vivid mental picture of the mediæval pile as it glowed in the crimson and orange of hundreds of torches and Bengal lights set about the battlements.

EDWARD D. PERRY

3. THE LOUVAIN AND GENEVA ANNIVERSARIES

The anniversaries celebrated in May by the University of Louvain and in July by the University of Geneva were, at least in their ecclesiastical features, sharply contrasted events; and the contrast was heightened by the fact that Louvain University was not commemorating its original foundation nor, primarily, its past centuries of fruitful activity, but its reëstablishment in 1834 as a Catholic University, while, on the other hand, the commemoration of the foundation of the University of Geneva in 1559 was associated with the celebration, by the university, the city, the canton and the Reformed Church, of the birth, fifty years earlier, of John Calvin, founder of both church and university. Although both of these university festivals were strictly academic in character and were conducted with such tact that the Catholic delegate could be as comfortable at Geneva as the Protestant at Louvain, the two functions were still in a marked degree ecclesiastical: they were demonstrations of the two great churches which divide the allegiance of western Christians.

Louvain is the intellectual center of the Catholic party in Belgium. From the University of Louvain came the movement for the establishment, under the name of "peasant guilds," of those modern coöperative agricultural associations which have solidified the rural vote and kept the Catholic party in power for a quarter of a century. Not only, accordingly, was the Louvain function splendid with ecclesiastical vestments, but it rallied the leaders of the Catholic party in Belgium, in France and in other European countries, and a municipal invitation to attend the unveiling of a statue of Lipsius brought to Louvain, during the academic celebration, a picturesque procession of delegates of the peasant guilds. Correspondingly, the foreign universities represented were for the most part those of Latin Europe and America, although those of Great Britain were well represented. The celebration was favored by good weather. It was admirably conducted, and it was most interesting and impressive. The foreign delegates were most hospitably entertained, both by the university and its professors and by the citizens.

In Geneva, the "Protestant Rome" of the sixteenth and seventeenth centuries, there was a similar but far more extensive rallying of the clergy of the Reformed and Presbyterian churches; the city was as somber with clerical black as Louvain had been gay with clerical gold and purple. The sky lamentably emphasized the contrast in the color scheme: it had beamed on Louvain, it wept steadily and copiously upon Geneva. The magnificent setting of the scene, between the lake and the mountains, was obscured; the excursions and garden fêtes which should have enlivened the week were hopelessly damped; and a historical pageant, organized with accurate knowledge and artistic feeling, wound through the streets and along the quays in soggy ineffectiveness. In spite of this disadvantage, the celebration was a great and a memorable thing. Never before, perhaps, had so many universities been represented at a single function: delegates came not only from all parts of Europe and America, but from many parts of Australasia, Asia and Africa. At no purely English celebration have the universities of the English-speaking nations been more fully represented. The gathering from all quarters of the globe of men eminent in every field of science would in itself have made the occasion notable, even if the historical associations connected with the celebration, and the shrewdness and kindliness of the Swiss people, from the president of the Confederation to the Genevese hotel-keepers, had not made it what every foreign visitor found it—an interesting experience and a grateful memory.

MUNROE SMITH

JOHN STEWART KENNEDY

THE long life of John Stewart Kennedy, which ended on October 31, 1909, is truly described as a life of consecutive fidelities. No life that has been lived in New York illustrates so completely as his how untouched and untainted sound character may be by material success and all that it brings. To the pomps and vanities of wealth Mr. Kennedy lived and died a total stranger. The fast hold which the Christian teaching of his youth had upon his entire nature made him, as he grew in influence and as his possessions increased, more and more completely the steward and trustee of what Providence had placed in his hands.

Mr. Kennedy's career and many sided public service may be pointed to with genuine pride, not only as an answer to the indiscriminate calumny which attacks wealth of every sort, but as an example of what citizenship may be made to mean to rich and poor alike.

Important as were Mr. Kennedy's business undertakings and affiliations, and controlling as was his own part in them all, it is not without significance that the public know his name best as that of a man given not only to good works, but to the intelligent study of the principles on which good works rest. It is not extravagant to say that by his wise benefactions to organized charity and to the New York School of Philanthropy, Mr. Kennedy raised social work of various kinds to the dignity and rank of a profession resting on an intellectual as well as a moral basis. While his generosity to the Presbyterian Hospital was almost limitless, still more beneficent was his constant presence in the wards where lay the sick and injured, with his never failing personal interest, his kindly word, and his sympathetic grasp of the hand.

When Mr. Kennedy entered the board of trustees of Columbia University, he was already nearly seventy-five years of age. He knew well Columbia's work and place, and held them both in highest respect, but only during the last years of his life was he brought

JOHN STEWART KENNEDY

Trustee, 1903-1909

into personal contact with our institutional life. The keen zest with which he followed it, and the wise criticisms and suggestions which he made concerning it, were helpful in high degree. Chosen at once to a place upon the committee on finance, Mr. Kennedy brought to his share in the management of the corporate property his long business experience and training, his wise judgment and his broad vision. When the building of Kent Hall hung in the balance, because two hundred thousand dollars remained to be raised, and the times were not favorable for large gifts, Mr. Kennedy urged that the building be undertaken in any event, because it was obviously needed and the public spirit of New York could be trusted to give it to the University in its entirety. He had the same feeling a few years earlier about the purchase of South Field, and when consulted only shortly before his death about hopes and plans for the possible rebuilding of the medical school, as the Harvard Medical School has been rebuilt, he had only hopefulness and confidence to express, and only words of encouragement and good cheer to offer, however heavy the undertaking might seem at the outset.

The princely gift of five hundred thousand dollars which met the cost of building Hamilton Hall, was made by Mr. Kennedy with absolute anonymity, and no one but himself and the president of the University knew the name of the giver. In connection with this gift he asked two questions: What does Columbia most need at the present time? and what will it cost to meet that need? When told that Columbia College was suffering grievously and that its historic identity was in danger of being lost through lack of a home of its own, and that the provision of such a home was perhaps the most pressing need of the moment, he asked no more questions except as to probable cost. When satisfied on this point, he made his great gift without condition of any sort or kind. This gift was made as his other gifts were made, from a desire to help and not from any ambition to purchase either notoriety or fame.

Mr. Kennedy's place in the active life of New York will not soon be filled. Not only at the council boards of important financial institutions and transportation systems will his face be missed, but also from the trustees of Columbia University, from the board of managers of the Presbyterian Hospital, from the board of trustees of the New York Public Library, from the governing board of the Metropolitan Museum of Art, and from a score of gatherings only in slight degree less well known or less important.

Mr. Kennedy's friendship when given was unfailing, and with his friendship went that full measure of confidence on which the best friendship is based. In return he gained for himself not only respect and admiration, but sincere affection. He died a genuinely and much loved man.

To have lived for almost eighty years, and to have left behind the reputation which will always attach to Mr. Kennedy's name, is indeed to build a monument more lasting than bronze. The Scotch Calvinism which was the cornerstone of his mind and character gave him unbending intellectual and moral integrity. On that foundation grew and flourished his abiding affections and fidelities. His was a noble and fine nature, and the world is indeed poorer because of his passing out into the everlasting life.

So much had been written of Mr. Kennedy's life and service before announcement was made of the way in which his great fortune was to be distributed. His last will and testament, certainly one of the most extraordinary and public-spirited ever drawn, illustrates in high degree Mr. Kennedy's characteristics of mind and heart. To the great institutions whose service and needs he had learned to know through personal contact, he made princely benefactions; to more than two score others, of which he personally knew less but in whose aims and purposes he believed, he reached out a helping hand. Fully one-half of the accumulation of his lifetime is to be devoted directly to the public interest. To Columbia he has made a gift, not only very large in itself—indeed, one of the largest ever made to any university—but the larger because it is made without any restriction whatever, so that the Trustees may, in their discretion, apply it to whatever use they see fit.

By the acts of his life and by the terms of his will, Mr. Kennedy has made himself one of the greatest benefactors in history, of institutions of learning, of religion, and of philanthropy. He has proved in every possible way the sincerity and depth of the convictions on which his life-work was rooted and the nobility and loftiness of the purposes toward whose accomplishment his life-work was planned. He was one of Plutarch's men.

NICHOLAS MURRAY BUTLER

CHARLES FOLLEN McKIM, Litt.D. 1904

Director of Atelier, 1905–1909

CHARLES FOLLEN McKIM

LITT.D. 1904

CHARLES FOLLEN McKIM, architect and head of the New York firm of McKim, Mead & White, a member of the University's advisory committee on art since 1898 and director of atelier since 1905, died on September 14, 1909, in his summer residence at St. James, Long Island. He had been in ill-health for more than a year, yet his death, which was due to heart-disease, was unexpected. Mr. McKim was known in many cities as a man who represented the best in beautiful architecture. He had been president of the American Institute of Architects, and was the founder of the American Academy at Rome. He received the gold medal at the Paris Exposition of 1900, and in 1903 King Edward gave him the royal gold medal for the promotion of architecture.

Mr. McKim was born in Chester County, Pa., in 1847, the son of Rev. James Miller and Sarah Allibone McKim. His father was a Presbyterian minister and one of the founders of the American Anti-Slavery Society. He went to the Lawrence Scientific School at Harvard in 1866, but the next year, in pursuit of his boyhood ambition to become an architect entered the Ecole des Beaux-Arts in Paris and took a three years' architectural course under Daumet. Then followed two years of travel on the continent, in which the young architect made an exhaustive study of Europe's classic models. He returned to this country and, in 1872, settled in New York, where he ever since practised his profession. As a member of the Congressional Commission for the Improvement of the Washington Park System, Mr. McKim contributed largely to the beautifying of the national capital. He was also a member of the National Council of Fine Arts, consisting of thirty experts appointed by President Roosevelt at the request of the American Institute of Architects, to report among other things on a Lincoln memorial.

Some of the important work of Mr. McKim's firm has included the Madison Square Garden of New York, the New York Life Insurance Company's buildings in Omaha and Kansas City, St. Paul's Church, Stockbridge, Mass., St. Peter's Church, Morristown, N. J., the American Safe Deposit Company's buildings in New York city; the casinos at Newport and Narragansett Pier, the Music Hall at Short Hills, N. J., the Freundschaft Club house, New York; the Columbia University buildings, the State Capitol of Rhode Island, the Brooklyn Institute of Arts and Sciences, the Walker Art Gallery of Bowdoin College, the building of the Department of Agriculture at Harvard, the agricultural building and the New York State buildings at the World's Columbian Exposition, the University and Harvard Clubs' houses and the Century Association of New York city, and the Library and Hall of Fame of New York University. The firm designed many monuments and memorials, as well, including the Washington statue in Paris.

Six years ago, when Mr. McKim received the royal medal that is the highest honor British architects may bestow, it fell to him as the most distinguished practitioner of their art in America. The circumstance that he had lately restored the capitol at Washington, following the design that an English architect had made for it, may have provided the particular occasion for the distinction; but he was chosen for it, in its larger aspects, as the foremost member of his profession beyond the Atlantic. British architects travel oftenest on the continent, and they are not especially curious or informed as to architecture in the United States. Presumably they had a general sense of Mr. McKim's talents, achievements and distinctions; but to be specific about his work and its qualities was probably beyond the knowledge of most of their number. In America, with the intelligent and the cultivated public that more and more interests itself in architecture Mr. McKim had a similar place and distinction. Admittedly, he was the most conspicuous of American architects. On every side and of many kinds was his work and the work of his firm. It caught even the casual eye; it stirred to comment, debate, and usually to admiration. Whether the mere observer or the closer student liked or disliked it, there was no questioning its distinctive qualities or the abilities, the predilections and the decisions that it embodied. There was as little doubt of its influence upon the general understanding and appreciation of architecture or upon the personal practice of a new generation of architects and the personal likings and requirements of a new race of clients. Justly, Mr. McKim and the firm in which he was the predominant partner were accounted the authors of these tendencies, the creators of these results. Both made them the foremost architects in America. The interested world readily acknowledged this primacy; but, as its way is, seldom inquired into the specific reasons for it.

Mr. McKim began the practice of his art in America in 1872; five years later he began his partnership with Mr. Mead; in 1879 the late Stanford White joined them; and thereafter for thirty years they did their work as McKim, Mead & White. As it increased, and especially in recent years, they picked from their staff a considerable body of younger assistants. Some of these passed more or less speedily to independent practice. Others remained in the office in which they had been trained, and, according to their capacities, shared in its work, as they now bid fair to continue its methods and standards. Formally, to the outside world, the work done, whoever had designed and accomplished it, was the work of McKim, Mead and White. Chance report or minor circumstance might disclose this or that building as chiefly from the hand of one of the three partners or hint at the share a particularly able assistant had borne in it. Yet, as the firm remained for almost thirty years a compact and rather secretive entitity, so it preferred to have its work known and judged as a whole. Such unity and continuity is rare in the practice of architecture by three men so diverse in talent and temperament, and of such forceful individualities as Mr. McKim, Mr. Mead and Mr. White. The ordering of a staff of able and ambitious young assistants is as full of pitfalls. True, the increasing practice of the firm steadily yielded new opportunities, but with them came new difficulties and the necessities of new adjustments. To the end, even after the death of Stanford White and the more recent withdrawal of Mr. McKim from active work, the firm kept its unity. Yet in all its thirty years Mr. McKim was the dominant partner. His abilities as an architect in the artistic and practical sense excelled those of his associates, while he had the critical, the ordering, the persuasive faculties that enabled him to hold them within the corporate standards and methods with which he would identify and individualize the common work of the firm. He could be authoritative, when the exercise of authority seemed the only and the securest way; he could reason persuasively and he could suggest tactfully. As he was, beyond his partners, the creative force of the firm, so he was its unifying and continuing strength. With his death, it must inevitably be more or less transformed; but in thirty years—a very short time in the arts—it has set a standard, enlightened a public and, if American architecture were not the fluid thing that it is, almost established a tradition.—From The *Boston Evening Transcript,* September 15, 1909.

EDITORIAL COMMENT

Dean Van Amringe

The thought of Columbia College without "Van Am" is harder to grasp than that of Hamlet without the Prince of Denmark—it seems almost a contradiction in terms. To few men is it given to enjoy simultaneously for a long term of years the full powers of vigorous and useful manhood and the affectionate reverence and the enthusiasm of the faithful multitude for their patron saint.

On June 30 Professor Van Amringe will lay down the burden of teaching and administrative work which he has borne so long and with such distinction, and we all wish him years of unbroken enjoyment of his new-found leisure. We hope, however, that he will feel it both his duty and his pleasure to keep closely enough in touch with the faculty, students, and alumni of his *alma mater* to continue to perform his peculiar function as a focus of enthusiasm and loyalty. We find it hard in this country—college men are no exception to the rule—to express the things we feel most deeply. We usually select, unconsciously, some particular attribute as an embodiment of what we feel but cannot express. For the Williams man, for instance, it is the purple hills about the village, for the Harvard man it is the Yard, for the Columbia man any time these thirty years it has incontestably been "Van Am." Such a union cannot be severed by resignation; the gift of his spirit has been too vital and too complete.

Change in Academic Grades

The passing of the academic grades of tutor and adjunct professor and the introduction of the new grades of assistant professor and associate professor places Columbia in line with most other American universities. It is a cause of just pride that in Columbia the professorial title has been jealously guarded, that Columbia professors are men who have won recognition for teaching ability and scholarly attainments, and that the salaries paid have been exceptionally liberal. It is less a cause of congratulation, however, that Columbia's reputation in these respects has been gained at the expense of many worthy young men on our teaching staff. Promotion to professorial rank is slow at best, but when that rank is rated relatively high, advancement to it must needs be the longer delayed.

Most of our younger teachers should seek advancement in other institutions, and good work here should find its reward elsewhere when we are unable to give it. The difficulty has been that other institutions have been unwilling to recognize the Columbia rank of tutor or instructor as the equivalent of their own rank of instructor or assistant professor. The situation is further complicated by the standards set by the Carnegie Foundation for the Advancement of Teaching. Only years of service in the professorial class may be counted in meeting the requirements for a pension. It is obviously unfair, therefore, to uphold a system, however gratifying it may be to Columbia pride, which tends to discourage the advancement of our instructors who are willing to accept promotion elsewhere, and at the same time penalizes them if they elect to stay with us. The new grade of assistant professor makes it possible both to recognize merit at an earlier stage and also to deal fairly with those whose merit deserves recognition.

The Alumni News

The QUARTERLY welcomes the *Alumni News* in the field of University journalism and congratulates the alumni upon having a publication which they can make distinctly representative of their views and sentiments. The News will have it in its power to perform a most useful service, and at the same time to assure its own success, by publishing timely and strictly accurate reports of University events and projects. Too much stress, however, cannot be laid upon the necessity for absolute accuracy. Both the University and the alumni have suffered more than their share in the past from publications too often incorrect or even worse, appearing in the public press. The News should be primarily what its name implies, a newspaper, but it is greatly to be hoped that the alumni will use its columns for the discussion of University questions, and that by letters and articles they will call general attention to matters which are of especial interest to graduates. Such discussion cannot fail to be of real value as a means of informing the University authorities of the trend of alumni opinion, and also as a means of correcting mistaken impressions due to the lack of information, or misinformation, upon which criticism is so often based.

That the News will be most heartily welcomed by the alumni, especially by those living at a distance, has already been demonstrated, and it is not too much to expect that the circulation, limited in the first instance to the members of alumni associations, will soon be extended to include a much larger constituency.

Alumni Association Scholarships

The establishment of a series of alumni association scholarships, referred to elsewhere in this issue, bids fair to serve important ends along several practical lines. A considerable change has been brought about since the removal to Morningside Heights in the percentage of out-of-town students in attendance on the University, and approximately half of our student clientele now hails from states outside of New York. But in order that Columbia may truly deserve the reputation of being a national university, there must be no diminution in the proportion of students enrolled from states outside of our own, and an effort must also be made to attract the able and the earnest in ever-increasing numbers. No better scheme has yet been devised for accomplishing this end than that adopted last year of granting to certain out-of-town alumni associations the privilege of nominating a resident of their locality to a scholarship in the University. The scholarship committees of the various associations have emphasized the value of meeting the applicants personally and have examined carefully into their worth and fitness. As a result the alumni association scholars now in residence are a credit to the system, and, what is more, they are bound upon graduation to become enthusiastic supporters of the work of the associations, thereby keeping the latter constantly supplied with new and vigorous blood. Besides, the prospect of a scholarship succeeds in calling the attention of a considerable number of desirable students to the opportunities afforded by Columbia, and not only the successful candidate but other applicants as well are apt to enter the University, as in the case of one association this year which sent four men instead of one as a result of the scholarship agitation. The associations are to be congratulated upon the President's offer to hold himself personally responsible for a still wider extension of the system next year; at the same time we would express the hope that the associations will within a few years be able and willing to support these scholarships themselves.

Employment for Students

One hundred thousand dollars is a large amount to be earned by the students of a single university in a single year, even if the student body numbers five thousand or thereabouts. This figure is enough in itself to attract attention to the report of the Committee on Employment for Students, an abstract of which is printed in this number, and there is other information in it which is of equal interest. We notice, for example, that two thirds of this hundred thousand dollars was earned during the academic year, one third in the summer; that about 30 per cent. of it was for work secured through the efforts of the committee; that 45 per cent. of it came from teaching and tutoring, 11 per cent. from clerical work, 7 per cent. from technical occupations, and 37 per cent. from miscellaneous and unclassified employments—a proportion so large as to suggest the desirability of further analysis.

From the table giving the forms of employment applied for, it may be discovered that each of the 715 registered students was ready to do on an average about six different things, for the total of the figures there given is something like 4,240. If by the side of these figures we could have a column showing the number of positions of each kind secured, the table would be a still better guide to "the prospective applicant." It is less important for him to know "the number of men with whom he must compete in each particular kind of work" than to know the relation between the number of men and the available positions: the eighteenth man ready to tutor in Hebrew, for example, or the second willing to teach Polish, might find a more restricted market for his wares than the forty-first, or for that matter the four hundred and forty-first, who offered himself as a waiter.

In connection with the tabular synopsis annexed to the report it may be well to point out that the mere statement of average earnings is scarcely sufficient. It would be more enlightening to learn how many students were able to earn their entire expenses, how many nearly all, how many half, and how many only a small fraction, and furthermore, though this may be beyond the immediate province of the committee on employment, how much university work was accomplished by each group of students. It is easy to see that a candidate for the doctorate might readily, by spreading his lecture courses over five or six years and working on his dissertation in his vacations, get his degree without interfering with his tenure of a regular position. School teachers are constantly doing it. Presumably such persons do not appear among the figures we have been considering, but there may be some who are in a not very different position. But graduate students and students in the professional schools are not the class for whom this question is of the greatest importance. Comparing the figures given in this report with the number of students enrolled in December, 1908, as given in the university catalogue, we get the following interesting and perhaps astonishing figures of the proportion of all students enrolled who were looking for work: College 36 per cent., law 33 per cent., mines, engineering and chemistry 19 per cent., medicine 17 per cent., non-professional graduate faculties 14 per cent., and fine arts 13 per cent.

If these figures have the significance which they appear to have, it is evident that the undergraduates are more eagerly seeking for an opportunity to earn their way than any other group in the student body. They are, of course, at the greatest disadvantage, as a group, in the way of equipment. They are less able to "arrange their work (that is, their academic work) to suit themselves," without endangering the benefit they get from it. They are at a more critical period in their education. We may look to the committee on employment, therefore, in the long run, to tell the undergraduate—the freshman and the sophomore—how much chance he has, how many chances in ten, say, of being able to work his way through college, and to give him sound advice as to whether it is expedient that he should do so.

The New South Field

Pending the erection of a river-stadium—a project which may credibly be regarded as not dead but only sleeping—the University has reason to be grateful for the New South Field. The old terraced plateau was in a way picturesque, but hardly well adapted to sports like baseball or football or lacrosse, needing room at the edges. So our students were driven to hire public grounds for their games—obviously an unfortunate necessity. The leveling of the field, moreover, is already also bringing about a desirable leveling of the peaks and valleys, as it were, of college athleticism. Now almost any fair afternoon, class-teams as well as 'varsity teams, gymnasium squads and tennis-players and runners, may be seen at work—or play. There has been recently a progressive duelling party with swords and pistols, as well as the clan-duel of the class 'rush'; only the boxing-ring and the wrestling-mat are wanting to the full gamut of combat.

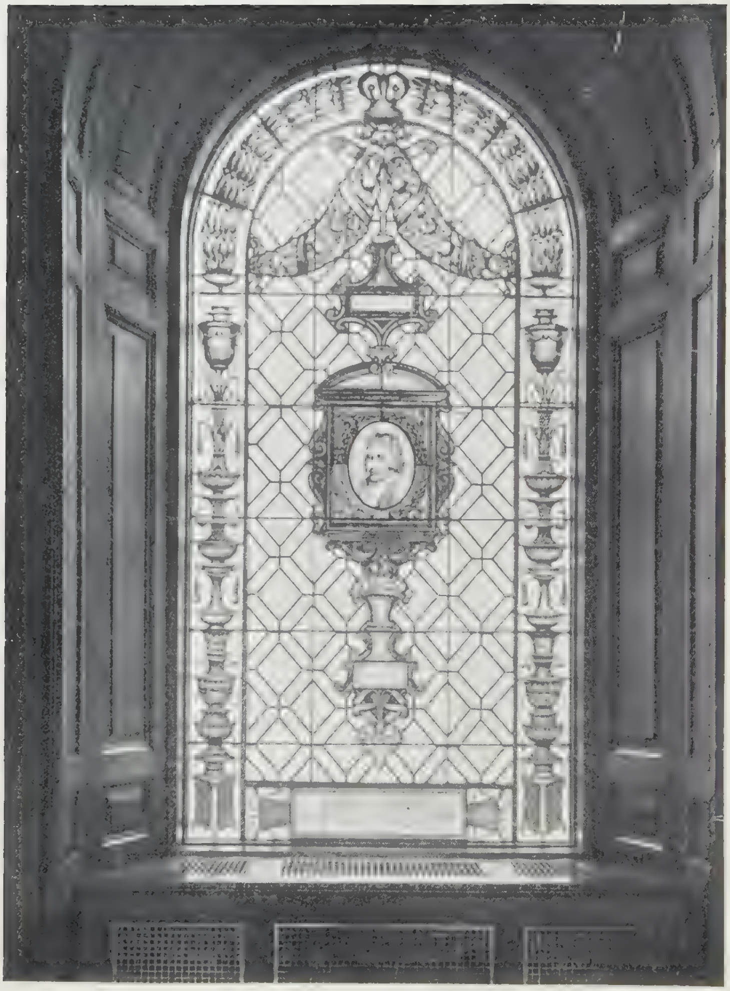
All this is as it should be. It is an old story to urge that young men should be enjoying their own games, not merely encouraging other young men—the few gladiatorial experts—to enjoy (?) theirs; but the happy ending of the story is yet to be written. We even confess—in full consciousness of the risk we are taking—to a persuasion that the present absence of any 'grand stand'—or rather 'sit-down'—is a good thing. The really righteous 'rooter' can see better, cheer better, keep warm better by following along the side-lines; so would—or should—the girl-worth-taking; and as for the outside public . . . well, better, we think, it remain the *outside* public.

We do not mean to be frivolous, unsympathetic with sport, or reactionary. We want sports, lots of them, more of them. We are rejoiced that the New South Field offers Columbia men new opportunity for sports, not ample but comparatively adequate. If only the average undergraduate might share our conviction that a good all-round healthy lover-of-sport is unlike the Purple Cow in that any sensible man would rather be, than see, one.

Additions to our Community

Opposite the Horace Mann School, running along the west side of Broadway from 120th to 122d street, a large, nearly completed building invariably attracts the attention of the passer-by and prompts his inquiry. It is the new home of the Union Theological Seminary. For the third time in its history the growth of Union Seminary has demanded ampler housing and about a year ago, through the generous gifts of the late D. Willis James and others, land was broken for this new and, it is hoped, permanent abode.

The architectural community of Morningside has thus gained another beautiful and stately member. In style the buildings are English perpendicular, the idea being "to reproduce as closely as possible the feeling of one of the old quadrangles of Oxford or Cambridge." A large memorial entrance tower, standing diagonally across from Columbia's grove, marks the natural head of the group. Adjoining this on Broadway is the library, which extends to the low tower on the axis of 121st street, and beyond to the north are the dormitories with their wide balconies and windows. In the direction of Riverside Drive on 120th street are the lecture halls and administration rooms with the president's house at the end, designed to form "the balancing motif to the entrance tower." Overlooking the Hudson is the chapel, clearly shown by a break in the line of the façade and by its tower one hundred and fifty feet in height. A social hall and enviable suites for the professors are on the north, along 122d street. Through the archway of the low library tower on Broadway one catches a glimpse of the inner quadrangle, a space three hundred and fifty feet long and one hundred feet wide, bordered by an arched cloister and terraced at the southern end. No less pleasing to the eye is the quiet harmony of the coloring. The solid stone of the walls, quarried from the site, is of a greyish blue cast, while the decorations of the towers, entrances and balconies are of a light brown limestone. To the interplay of light and shade the suggestive atmosphere of the buildings is largely due.



LIVINGSTON WINDOW

Livingston Hall

Plans were filed with the building department in October for a new fireproof building to be erected at the northeast corner of 122d street and Claremont avenue for the Institute of Musical Art of the City of New York. The Institute was endowed four years ago with half a million dollars given by Mr. James Loeb in memory of his mother. Since that time the school has been located in the remodeled Lenox residence on lower Fifth avenue, but its recent growth has rendered larger quarters imperative. The cost of the new building, a five-story structure, will be approximately three hundred and fifty thousand dollars.

We extend a hearty welcome to our new neighbors.

The Livingston Window

No better means of illustrating and emphasizing the aims and purposes of the University can be found than by commemorating the important public services of her alumni, and the recently presented memorial window, containing the portrait of Chancellor Livingston, which has been placed in Livingston Hall, is a welcome addition to our historical gallery. The window is the gift of John Henry Livingston, '69, Edward de Peyster Livingston, '82, and Goodhue Livingston, '88, and was designed by W. M. Kendall of the firm of McKim, Mead and White, and George W. Maynard. It occupies one of the large fenestrations at the sides of the fireplace in the easterly wall of the entrance hall of Livingston, and both in design and color treatment harmonizes with its surroundings, adding greatly to the dignity and beauty of the room, though it strongly suggests the desirability of filling the space on the other side of the mantel with a window of corresponding design and character. Among the alumni included in the distinguished group of which Livingston was a member, there can be no difficulty in finding a suitable subject for such a window, and it is to be hoped that the example of his descendants may soon be followed by those of one of his contemporaries.

Western Universities

After the discussions of Harvard, Yale and Princeton, noted in the June QUARTERLY, Dr. Edwin Slosson's studies of "Great American universities" in the *Independent*, proceed to the west. The unique promise of *Leland Stanford* (in the issue for April 1) appears to him to be yet unfulfilled. Its landscape, climate, seclusion and wealth provide unparalleled advantages for steady mental work, as Professor William James once said. But the United States government's claim to the university's funds tied them up from 1893 to 1899, and the restoration of the equipment destroyed by the earthquake of 1906 still restricts academic expenditure. The question of faculty free speech was raised by the dismissal of Professor Ross for partizan utterances in 1903, and certain wholesale disciplinary measures in 1908 distressed alumni as well as students. These problems have postponed the advanced investigation especially desired by President Jordan, and his corresponding desire to depute freshmen and sophomores to affiliated colleges has not yet been approved. Stanford's actual experience in undergraduate matters, however, has been instructive. Its annual suspension of about twenty per cent. of its students for delinquency makes questionable its practice of admission without examination. The more careful selection of women, incidental to the limitation of their numbers, has raised their scholarship considerably above that of the men. The major subject system, by which a student takes one course a year in some one department and whatever else the head of that department directs, appears to overemphasize the discretion of the individual professor. The open air activities invented by Stanford students are suggestive for physical education everywhere.

The *University of California* (May 6), on the other hand, seems to be fully profiting by its advantages of suburban freedom and city proximity, of private endowment and state aid. Not long ago it had more private gifts than all other state universities put together, some of them, like the Greek theater, highly influential. The original college of letters has lost most of its students, chiefly to social science, but not before influencing the engineering school to encourage cultural studies. The military drill characteristic of state universities gives good physical, mental and moral results at California. The schools of agriculture and of industrial arts have extensive relations with the people and the university's supervision of the state's high schools helps both. The graduate school, recently strengthened by a law requiring all high school teachers to have a year of such work, has accomplished much creditable research, notably in astronomy with the aid of the Lick observatory. The affiliated professional schools in San Francisco have not done so well, so that work in medicine and law is now being developed at Berkeley, and religious denominations are establishing theological seminaries there. The university has no dormitories and there are many fraternities, sororities and residence clubs. But the system of student control is both adequate and inventive of such admirable customs as working at beautifying the campus on Labor Day.

Michigan (May 27), the earliest and long the typical state university, has just passed through a period of conservatism. It has always lacked the state agricultural college and the state school of mines, which are separate foundations. Few forms of extension have been undertaken; the appointment of the first American professor of teaching has not yet resulted in a school of education, and there has been little advanced research. But it was the first university to adopt coeducation, and its work in law, medicine and marine engineering and the size and quality of its summer session are notable. The problem of the largest body of undergraduates in the country has resulted in new plans for student regulation, in the erection of denominational buildings for religious work, the provision of a students' union and the proposal of at least semi-official dormitories.

The *University of Wisconsin* (July 1) is most intimately incorporated with the state. It aids legislation and provides state experts for geology and forestry, reclamation and conservation, natural history and live stock, agriculture and parks, railroads and assessment, health, hygiene and sanitation, and various other things. The state library and the state library school cooperate with the university in supervising the state's public school and traveling libraries. The university's half dozen courses in agriculture have a dozen kinds of extension. The school of engineering conducts classes in manufactories and by correspondence. Provision is being made for university offices throughout the state and for sending a teaching fellow to every important high school. The values of such "rural free delivery of education" are obvious. Its limitations are that legislators have been at times too interested in the university, and that the university has neglected architecture and is just beginning mining and medicine. Its most notable scholarship has been in economics under Professor Ely ('76), with its attendant courses in commerce and journalism. A recent movement for the segregation of women resulted in proof that they are more than holding their own in scholarship, in a law against any discrimination and in a new building for home economics. The university is soon to have a series of group dormitories, and, when the bequest of Professor Vilas becomes operative, many scholarships and fellowships and at least ten research professorships, paying from five to ten thousand dollars annually for not more than three lectures a week.

The recent growth of the *University of Minnesota* (August 5) has been so rapid that half of its alumni graduated in the last five years. It has more women and more self-supporting students than any other university. Little research has been carried on except in agriculture, but the university is intimately adjusted to the public schools of the state, has successful evening courses in law, and is planning for industrial and commercial training. Its location near a great city, the capital of a rich and populous state, and far from any similar institution promises much. The *University of Illinois* (September 2) has also developed rapidly in the last dozen years, emulating Wisconsin in its state interrelations and leading in specific support for graduate work, now one hundred thousand dollars annually, with another fifty thousand dollars for books. It has not only an agricultural but an engineering experiment station, specializing in steam and electric railways, in which Illinois is first in aggregate mileage. It also attends to many matters, like ceramics, which make the state third in manufactures. The state's geology, zoology, botany, history and literature are also remembered and, perhaps best of all, superabundant student energy is so led as to find its outlet in fine enthusiasms like a great annual electrical show.

Dr. Slosson's articles on Cornell (October 7), Pennsylvania (November 4), Johns Hopkins (December 2), and Chicago (January 6), to be noted in the March QUARTERLY, will be followed by a study of Columbia, the last of the series.

Gifts 1901-1909

The grand total of gifts in money made to the several corporations included in the University for each of the last eight years is as follows:

1901–02	$ 1,082,581.02
1902–03	1,721,895.06
1903–04	1,783,138.18
1904–05	1,960,247.87
1905–06	1,299,909.78
1906–07	1,360,590.80
1907–08	1,077,933.87
1908–09	737,215.08
	$11,023,511.66

THE UNIVERSITY

Opening Exercises

The opening exercises of the 156th academic year were held in the gymnasium on Wednesday afternoon, September 22. After a prayer by Chaplain Knox and the singing of "Stand Columbia," President Butler formally welcomed the new and old students and officers to the University. In the course of his address Dr. Butler referred to the unusual honors various Columbia officers had received at the hands of other institutions of learning, both in America and in Europe, and in closing spoke in warm terms of the services rendered to the University by the late John Crosby Brown, trustee, and Charles F. McKim, architect. The annual academic address was delivered by Brander Matthews, professor of dramatic literature, upon "Standards of Success." At the close of the address President Butler introduced Dr. Carl Runge of the University of Göttingen, the present incumbent of the Kaiser Wilhelm professorship; Dr. Otto Jespersen of the University of Copenhagen, professor of English philology in Columbia University for the academic year 1909–10; Dr. Leo Burgerstein, professor of school hygiene at the University of Vienna; Dr. Eduard Meyer, professor of ancient history in the University of Berlin and exchange professor for 1909–10 at Harvard University, and President Benjamin Ide Wheeler of the University of California, Theodore Roosevelt professor in the University of Berlin. A brief address by President Wheeler brought the exercises to an end.

At the close of the exercises in the gymnasium a number of officers and guests of the University proceeded to Livingston Hall to inspect the new Livingston memorial window in the entrance hall. No formal dedication was made.

* * *

Hudson-Fulton Celebration

On the afternoon of October 2, the grounds of the University presented an unwonted aspect. Officers of the United States Navy, representatives of the fleets of other nations at the Hudson-Fulton Celebration, and other guests of the celebration commission were being entertained in the grove at a garden fête by a committee of ladies and gentlemen of New York who were desirous of showing some personal courtesy to the guests of the city. Through the cooperation of the Navy Department, the fence surrounding the grove was gayly decorated with flags, and several bands, from both American and foreign ships, furnished music outdoors as well as in the gymnasium, where several hundred couples enjoyed a pleasant dance. The gathering was a signally successful one, and should point to a frequent use of the grounds of Columbia University for entertainments of various kinds.

While the officers of the fleets were being entertained in the grove, some three thousand men-o'-wars' men from the ships were enjoying a somewhat different although not the less acceptable form of hospitality on South Field. For them there was an excellent vaudeville program on open-air stages and also athletic games, in which there was keen rivalry between the crews of the several American battleships and the British, German, French and Italian "jackies."

The committee representing Columbia University and making the arrangements for these entertainments included the following: William Curtis Demorest, '81, chairman; Charles A. Beard, '04 Ph.D., T. M. Cheesman, '74, Frederick Coykendall, '95, Dixon R. Fox, '11, Dean Frederick Arthur Goetze, Frederick P. Keppel, '98, Chaplain Raymond C. Knox, William Langer, '10, Benjamin B. Lawrence, '78S, B. Aymar Sands, '74, Herbert Livingston Satterlee, '83, F. H. Saunders, '10, and Addison A. Van Tine, '08.

The suggestion that the Columbia University grounds be used for the purpose came from Dr. George F. Kunz, '98H, chairman of the special committee on garden fête of the Hudson-Fulton Celebration Commission, while Colonel Robert M. Thompson, president of the Alumni Association of the United States Naval Academy, was responsible for the general scheme of the entertainment. The carrying out of the plans was in the hands of the consulting engineer of the University, Dean Goetze. Among the members of the celebration commission were Stewart L. Woodford, '54, chairman, and Seth Low, '70.

* * *

Kent Hall

The cornerstone of Kent Hall was laid on the afternoon of October 4, 1909, in the presence of the President and trustees of the University and the members of the faculties of law and political science. The following publications were placed in the cornerstone: The charters of the University, the statutes and by-laws of the trustees, a copy of the Memoirs and Letters of Chancellor Kent, a copy of Kent's Commentaries, announcements for 1909–10 of the faculties of law and of political science, and the newspapers of the day.

The cornerstone was laid by George L. Rives, chairman of the board of trustees, and addresses were made by Professor Kirchwey, Professor Cushing, acting dean of the Law School, Professor Goodnow and the President. Mr. Rives spoke as follows:

> The first institution of learning in North America to establish a professorship of law was Kings College; and though the instruction given before the Revolution was doubtless fragmentary and imperfect, the determination of the governing body of the College to create a school of jurisprudence never faltered.
>
> One of the earliest acts of the new corporation, constituted by the state legislature shortly after the British evacuated the city, was to provide for the appointment of three professors,—one of the Roman law, one of the municipal law, and one of the law of nature and of nations. Circumstances, however, were stronger than the regents, and it was not until ten years later that James Kent began the course of lectures which was destined to prove so fruitful. It is impossible to dwell this afternoon on these famous lectures, but at least I may venture to remind you that Kent's plan was by no means confined to teaching law as a profession. His design embraced a study of our municipal law, but it included also a discussion of the nature and just ends of civil government, the history of the United States, and the interpretation of its Constitution. It was apparent therefore, when the trustees of Columbia were finally enabled to see their way to the erection of a building to be devoted exclusively to the study of jurisprudence, that it could bear no other than the distinguished and venerable name of Kent.
>
> The public and the legal profession did not recognize, until the nineteenth century was more than half spent, the need of University training in the science of the law; but nevertheless the great and comprehensive design of a school of jurisprudence was not forgotten by our wise predecessors who, fifty odd years ago, charted the courses on which our University ship has since been sailing. Their far-seeing plans must have seemed, for many years, to partake of the nature of a poet's dream; but they have now long since been realized. Our highly successful schools of law and political science, although differing in their immediate objects, do combine to form one complete and admirable school of jurisprudence, whose high mission it is, and must be while our form of government endures, to train up men fitted to be the chief instruments in framing, in administering and in interpreting our laws.
>
> The airy nothings of 1857 have thus taken shape, but they have always lacked a local habitation. In one hired house after another, in the basement of the library in forty-ninth street and in the top story of the library on Morningside Heights, the work of these two great departments of our University has been pursued in unsuitable and temporary quarters. But thanks to the generosity of several wise

and liberal benefactors, we have been enabled at last to provide a permanent home—if any home can be permanent in this changeful city—for our schools of jurisprudence; and we are met here this afternoon to lay the cornerstone of a spacious building, which is designed to be as solid and lasting, as symmetrical and logical, as that perfection of reason—the Common Law itself.

* * *

The President's Reception

President Butler's reception to the newly appointed professors was held in Earl Hall on the afternoon of the twelfth of October, and was thoroughly enjoyed by every one present. The new members of the faculties are:

John W. Alexander, National Academician, president of the National Academy of Design; Evan M. Evans, M.D., professor of clinical medicine; William D. Guthrie, A.M., professor of law; Theodore C. Janeway, M.D., Bard professor of the practice of medicine; Otto Jespersen, Ph.D., professor of English philology; William Dawson Johnston, A.M., librarian of the University; William G. MacCallum, M.D., professor of pathology; Carl Runge, Ph.D., Kaiser Wilhelm professor of German history and institutions for the year 1909–10; George Winfield Scott, Ph.D., professor of international law; Raymond Weeks, Ph.D., professor of the Romance languages and literatures; Bergen Davis, Ph.D., adjunct professor of physics; Charles North Dowd, M.D., adjunct professor of clinical surgery; John Erskine, Ph.D., adjunct professor of English; Lucius W. Hotchkiss, M.D., adjunct professor of clinical surgery; Adam Leroy Jones, Ph.D., adjunct professor of philosophy; Henry Raymond Mussey, Ph.D., adjunct professor of economics; Naomi Norsworthy, Ph.D., adjunct professor of educational psychology; Charles H. Peck, M.D., adjunct professor of clinical surgery; George B. Pegram, Ph.D., adjunct professor of physics; Marie Reimer, Ph.D., adjunct professor of chemistry; Hugh Angus Stewart, M.D., adjunct professor of pathology; Karl Max Vogel, M.D., adjunct professor of clinical pathology; Augustus B. Wadsworth, M.D., adjunct professor of bacteriology; John B. Walker, M.D., adjunct professor of clinical surgery, and Charles P. Warren, A.M., adjunct professor of architecture.

* * *

Report of Employment Committee

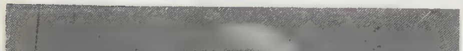
The annual report of the secretary of the Committee for Students, Paul C. H. Holter, '07, shows that Columbia students earned $100,223.36 during the year 1908–09, an increase of $4,368.36 over the earnings reported for the preceding year. The Law School exhibits the largest increase in total earnings, the figures being $20,030.47 for the past year as against $16,175.54 for 1907–08. Leaving the summer vacation out of consideration, the

CARL RUNGE

Kaiser Wilhelm Professor, 1909–10

BENJAMIN IDE WHEELER

Theodore Roosevelt Professor, 1909–10



JOHN ERSKINE, 1900

Adjunct Professor of English

RAYMOND WEEKS

Professor of the Romance Languages and Literatures

largest gain was made in the College, namely, one from $9,327.04 to $15,117.92. During the year under review there were 400 requests from employers, of which 349 were filled, representing 614 individual positions.

Among the positions filled by the committee were the following: Tutor, companion, clerk (summer hotels, department stores, banks, etc.), watcher at polls, draftsman, proctor, canvasser, watchman, waiter, usher, stenographer, typewriter, translator, camp assistant, musical director, messenger, athletic coach, advertising agent, elevator man, settlement worker, reader, snow removal inspector, lay reader, singer, manager of boys' club, attendant, writer of Valentine jingles and of sonnets, etc. The department of anthropology engaged the services of a number of students for research and statistical work, the returns from which amounted to approximately two thousand dollars.

The removal of the headquarters to the office of the Alumni Council has been of decided advantage in carrying on the work of the committee. By the increased amount of time this step has placed at the disposal of the secretary, a better opportunity is offered him to follow up requests, and it likewise furnishes him with increased facilities to study the needs and qualifications of the individual student, thus bringing him into that personal contact with the applicant which is so essential in work of this character. Furthermore, it has brought the committee into closer touch with the alumni, thereby opening a new avenue of approach for temporary and permanent employment. Although the committee has been very fortunate during the past year in securing funds for the purpose of advertising, still larger funds are necessary to accomplish the best results.

* * *

The George Rice Carpenter Memorial Library

In the June QUARTERLY a notice appeared of a proposal to establish a library, in connection with the department of English, as a memorial to the late George Rice Carpenter. A committee was formed to solicit subscriptions and the proposal received the approval of the board of trustees, which voted to provide suitable rooms. Up to October 18 subscriptions have been received to the amount of one thousand six hundred and fifty dollars and, in addition, gifts of books aggregating several hundred volumes. It is impossible at present to provide permanent rooms for the library, but temporary quarters have been arranged in 513 Fayerweather. An appropriation of five hundred dollars has been set aside by the University for book-shelves and tables and to provide for the cataloguing of the library. Some twelve hundred books from Professor Carpenter's personal library have been purchased, and the memorial library will be an accomplished fact by the time this notice appears in print.

The committee wishes to acknowledge subscriptions and gifts of books from the following persons. Lists of additional subscriptions will be printed in subsequent issues of the QUARTERLY.

Anonymous subscribers (3), Herbert V. Abbott, Morris L. Arnold, George P. Baker, Gertrude E. Ballard, Nathaniel W. Barnes, Bernhard Berenson, Frances Berkeley, Marston T. Bogert, Archibald L. Bouton, Hjalmar H. Boyesen, John G. Bowman, William T. Brewster, LeBaron R. Briggs, Charles F. Chandler, John B. Clark, Helen Cohen, Elizabeth Colton, John H. Denbigh, R. S. Neil Dodge, Henry J. Eckstein, James C. Egbert, Mabel Elting, Wilson Farrand, William L. Felter, Arthur A. Fowler, Jefferson B. Fletcher, Louisa B. Gere, Virginia C. Gildersleeve, Harold C. Goddard, William K. Gregory, Frank S. Hackett, Clayton M. Hamilton, John D. Haney, Norman Hapgood, Virginia Houston, Mark A. deW. Howe, Grace Hubbard, Emeline K. Hunt, Lillian T. M. Jones, James F. Kemp, Frederick P. Keppel, Cassius J. Keyser, Abraham Kovar, George P. Krapp, Susan L. LaMonte, Samuel P. Lockwood, Longmans, Green & Co., Seth Low, Annie L. McMakin, Brander Matthews, Theodore C. Mitchill, The *Nation,* William A. Neilson, George Noyes, George C. D. Odell, George H. Perry, John B. Pine, Eva S. Potter, Robert I. Raiman, Henry S. Redfield, Ralph C. Ringwalt, George L. Rives, Fred M. Robinson, Frederick W. Roe, Julius Sachs, Jacob S. Schlussel, Herbert F. Schwarz, Fred Newton Scott, Henry R. Seager, Alice L. Seligsberg, J. Sherwood Seymour, Edwin R. A. Seligman, Kenneth C. M. Sills, Vladimir G. Simkhovitch, William M. Sloane, Carlo L. Speranza, Bird W. Stair, Helen D. Tanzer, Algernon Tassin, Ashley H. Thorndike, Rudolf Tombo, Jr., William P. Trent, Jane B. Walker, Amy Wallace, Mabel F. Weeks, Richard Weil, Chauncey A. Wells, Barrett Wendell, Frederick J. E. Woodbridge, Samuel C. Worthen, and Elizabeth H. Wyman.

* * *

Press Activities

Since the last record of press activities in the QUARTERLY a number of new volumes, some of them of more than ordinary interest, have been added to the list of Press publications. Of these newest books, one of the most important is the first volume to appear of the lectures on the Carpentier foundation, "The nature and sources of the law," by Judge John C. Gray, Royall professor of law in Harvard University, who delivered them before the University in the spring of 1908. Judge Gray in his preface states that the ideas embodied in the book took their present shape a dozen years ago, but that they would perhaps never have been published had not this University invited him to lecture. The book is a lucid and masterly exposition of its subject and as a whole stands absolutely alone in the broad field which it covers. A book which has already attracted favorable attention from the press of the country is " The transition in Illinois from British to American government," by Robert L. Schuyler, instructor in history in Yale University. The book describes the transition in government which occurred during the period of the Revolution in the whole of that part of the West then known as " the Illinois," and concludes that the result of British administration in the West was a decisive factor in the abandonment of that territory. A volume of more special interest is " The Shaksperian stage," by Victor E. Albright, which appears as a number in the Columbia University Studies in English. The book contains a number of illustrations and is an interesting as well as a valuable addition to the literature of the history of the theater in the England of Shakspere. Three new volumes have appeared in the Columbia University Studies in Classical Philology, " Studies in the philosophical terminology of Lucretius and Cicero," by Katharine C. Reiley, an account of the enrichment of the Latin language in this particular direction by the two writers considered; " Costume in Roman comedy," by Catharine Saunders, which considers the costume and properties of Roman actors, particularly in the period of Plautus and Terence; and the only Latin publication thus far issued by the Press, " De infinitivi finalis vel consecutivi constructione apud priscos poetas graecos," by Charles J. Ogden. A new number in the Contributions to Oriental History and Philology is " The witness of the Vulgate, Peshitta and Septuagint to the text of Zephaniah," by Sidney Zandstra.

In the press at the present time, in addition to forthcoming publications noticed in the last record in the June QUARTERLY, are a new volume in the Indo-Iranian Series, " The Dasarupa, a Hindoo treatise on dramaturgy," by G. C. O. Haas; " The Shemoneh Perakim of Maimonides," by J. I. Gorfinkle, a new number in the Contributions to Oriental History and Philology; and " Charles de Sainte Marthe," by Caroline Ruutz-Rees, which is to be included in the Studies in Romance Philology and Literature.

Religious Interests

The four o’clock Sunday services began this year with the opening of the fall term, and, as heretofore announced, the sermons form a connected series on the subject, “Christianity and the modern world.” The alumni are especially invited to these services. The singing of the student choir, under the leadership of Organist Ward, is becoming well-known for its excellence. A choir concert will probably be given early in the winter.

At the daily chapel services a course of addresses was given during October and November on “The all-round college man,” the speakers being members of the University staff. The different interests of college life were presented and related so that the students could receive practical guidance in gaining a well-rounded and efficient manhood. The speakers and subjects were as follows: Professor Calvin Thomas, Study; Professor H. G. Lord, Sports; Professor Rudolf Tombo, Jr., Organizations; Professor C. A. Beard, City opportunities; Chaplain Knox, Religion; Professor H. B. Mitchell, Leisure; and Professor G. W. Kirchwey, Choosing a profession.

The Christian Association started its work with a number of new activities, the most important being the direction of the boys’ work at Union Settlement in East 104th street. The Association has the use of a gymnasium and several club rooms and has placed S. M. Dawkins, ’10L, in charge as director. About twenty-five men, led by E. H. Osterhout, ’10, visited the settlement early in October and were definitely assigned the work for which they are responsible. This arrangement establishes the beginning, at least, of a Columbia settlement, offers opportunity for men to learn at first hand the difficult social and civic problems of New York, and affords a very practical means for developing the spirit of sympathy and service.

* * *

Professor Runge’s Lectures

The course on Graphical Methods in Mathematics and Physics announced by Professor Carl Runge of Göttingen, Kaiser Wilhelm professor in Columbia University for 1909–1910, has proved to be most successful. The course consists of a two-hour lecture given at four o’clock every Wednesday afternoon, and a two-hour practicum at four o’clock every Friday afternoon. Twenty-six students of the University are regularly registered in the course, and all are most enthusiastic in regard to it. The Wednesday lectures attract many visitors, not only from New York but from other cities.

Professor Runge speaks English perfectly and is an accomplished expositor. The subject of graphical methods is one to which he has given much attention and to which he has made many contributions. Many of the methods explained in his lectures have been a revelation to mathematicians and to physicists who have not made a special study of the subject. He has received a number of invitations from scientific societies in New York and the vicinity and from other universities to give a brief account of his lectures at Columbia University and to make addresses upon other scientific subjects with which his previous scientific labors have identified him.

* * *

President Lowell's Inauguration

At the inauguration of President Lowell, on October 6, 1909, the honorary degree of doctor of laws was conferred on President Butler, Professor Frank J. Goodnow and the Rev. Francis Brown, president of Union Theological Seminary and member of the University Council. The following address* from Columbia to Harvard was presented at the inauguration:

Praeses Curatores Professores
UNIVERSITATIS COLUMBIAE
In Urbe Novo-Eboraco
[SEAL] Senatui Academico
Universitatis Harvardianae
S. P. D.

Vobis viri clarissimi, novum praesidem felicissimis auspiciis inauguraturis, laetantes gratulamur. Ille vir quem ut Universitatem Harvardianam, aliarum universitatum matrem perillustrem atque venerabilem, administraret sapientissime designavistis, res optimas a maioribus tute traditas et conservabit et sine dubio mirifice augebit. In rerum publicarum scientia versatus nihilominus rerum academicarum peritum se monstravit, neque incertum est quin posteri illius nomen nominibus eorum qui honoris tanti eiusdem participes illum praecesserunt,—Mather, Kirkland, Quincy, Everett, Sparks, Felton, Eliot,—et fama quorum gloriaque numquam peribit, unanimi consensu coniuncturi sint.

Per viros quos lectos ex ordine nostro secundum literas vestras humanissimas Cantabrigiam mittemus, plenius ac perfectius nostram benevolentiam testificabimur; interea voluimus nescii ne essetis quanto gaudio diei memorabilis mox agendi nuntium accepissemus, quam pia, quam cara, quam sincera vota pro salute atque utilitate vestra faceremus, quam felicia, in summo, omnia vobis apprecaremur.

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* This address, as well as those to the Universities of Cambridge, Geneva, Leipzig and Louvain (see Quarterly, September, 1909, pp. 501–504) are the work of the Anthon professor, Dr. Harry Thurston Peck.

Valete

Nicolaus Murray Butler

Praeses

DATUM Novi Eboraci Kal. Octobr. Anno Salutis M. CM. IX.

Columbia's official delegates at the inauguration were President Butler, Dean Van Amringe, and George L. Rives, '68, chairman of the board of trustees. In conferring the degree upon Dr. Butler, President Lowell said:

Nicholas Murray Butler, president of Columbia University, an institution whose services are writ large in the annals of American education; himself a teacher of teachers, to whom the country owes a lasting debt for the Teachers College.

Professor Goodnow was characterized as follows by President Lowell:

Frank Johnson Goodnow, professor of Columbia; clear of brain and tireless in work; an expounder of administrative law and municipal government, who has trained many disciples by his teaching, enlightened the public by his works, and placed his great knowledge freely at the service of the state.

President Butler was among the speakers at the meeting of the Harvard Alumni Association held on October 6, and was also one of fifteen college presidents who attended a complimentary dinner to President Emeritus Eliot at the University Club of Boston on the evening of October 5.

In connection with the inauguration exercises an interesting meeting of junior administrative officers of eight or nine of the American universities was held at the Colonial Club on October eighth. No formal organization was effected, but the meeting and the interchange of views was so stimulating that there seems little doubt that at least one similar meeting will be held each year, with representatives of additional institutions in attendance. This informal gathering is noted in the Quarterly as a sign of the times, giving evidence that a new calling for men who wish to become public servants is in process of development. None of the men at the conference was a teacher, even incidentally, but all were college graduates giving their entire time to some branch of academic administrative work.

* * *

In addition to those mentioned in the September issue of the Quarterly, honorary degrees were recently conferred upon Columbia officers

Honorary Degrees

as follows: Leipzig University awarded the degree of doctor of philosophy, *honoris causa,* upon Dean John W. Burgess, and that of doctor of medicine upon Professor Edmund B. Wilson, while the degree of doctor of laws was conferred upon the following: President Butler by Williams College, Professor Frank Hartley by Princeton University, Professor Brander Matthews by Miami University, Professor James E. Russell by McGill University, and Professors Franz Boas and Marston Taylor Bogert by Clark University. Dartmouth College awarded the same degree to President Butler on occasion of the inauguration of President Ernest F. Nichols on October 14, and Hobart College conferred the degree of doctor of science, *honoris causa,* upon Professor Dickinson Miller in June.

* * *

Columbia Representatives

At the forty-seventh University Convocation of the State of New York held at Albany on October 30 and 31, Columbia was represented by Librarian Johnston, and Professor Julius Sachs of Teachers College, both of whom delivered addresses before the conference. Mr. Johnston spoke on "The library as a reenforcement of the school," and Professor Sachs on "Improved standards of teaching."—Professor W. H. Carpenter represented the University at the installation of Dr. Elmer Buritt Bryan as president of Colgate University on October 20.—Professor Le Roy Weller, A.M. 1906, of the department of philosophy of Beaver College, Beaver, Pa., represented Columbia at the installation of William W. Foster, Jr., as president of the institution mentioned.

* * *

Campus Improvements

Chief among the improvements made during the summer on the University grounds has been the completion of the work of regrading South Field. By far the greater part of the field is now covered by a level green, around which runs a quarter mile track. The handball courts have disappeared, but their loss has been more than compensated for by the construction of fifteen tennis courts enclosing the field on three sides. The reconstruction of South Field was begun with contributions furnished by the classes of '84, Mines, and '99, College and Science, but the fund was not sufficient to fully cover the cost of the work. The University advanced the difference in order that the work might be completed by the opening of the college year, but hopes to be reimbursed by alumni subscriptions.

Work on Kent Hall, which is to be the home of the schools of law and political science, is progressing rapidly. The foundation is complete and the steel-frame and granite sidings are now in process of erection.

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Alumni Scholarships

At the suggestion of the Alumni Council six scholarships, five in the College and one in the Schools of Mines, Engineering and Chemistry, were awarded for the academic year 1909–10 on the basis of nominations by out-of-town alumni associations. The plan was put into operation last year in connection with the Illinois Alumni Association and worked so well that an extension was arranged by the deans of the schools for 1909–10, and a still further development of the system has been rendered possible for the year 1910–11 by the offer of President Butler to make himself responsible for the funds necessary for one year's tuition fee in any school of the University corporation. The President's offer holds for all those out-of-town alumni associations which are qualified to participate in the nomination of the next alumni trustee, namely, those of California, Colorado, The District of Columbia, Illinois, Indiana, Kansas City, Minnesota, New Jersey, Philadelphia, Pittsburgh, St. Louis, Washington State, Western New York, Wisconsin, and Yonkers. The alumni association scholars at present in residence are: Carolus Sylvester Woodwell, 1912C, District of Columbia; John Pierre Roche, 1911C, and William Walter Renwick, 1911C, Illinois; Warren H. Heins, 1910C, Minnesota; G. Raynolds Stearns, Jr., 1913C, Western New York; and Anthony Wayne Carruthers, 1913S, Pittsburgh.

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Alumni Statistics

Since the foundation of Kings College in 1754, there have been 24,534 degrees awarded by the University to 22,121 individuals. In 1900 the figures were 14,256 individuals and 15,263 degrees. The degrees granted from 1758 to 1900, inclusive, are distributed over the various faculties as follows: medicine 7,512, law 5,091, College 4,482, non-professional graduate schools 2,893, mines, engineering and chemistry 1,949 Barnard 808, Teachers 642, architecture 255, political science 122, pharmacy 62, and honorary degrees 718.

SCHOOL AND DEPARTMENT NOTES

Architecture—Teachers College—Anatomy — Anthropology — Astronomy—Botany—Chemistry—Clinical Pathology — Dermatology—Economics and Social Science—Electrical Engineering—English—Geology—Germanic Languages—History—Indo-Iranian Languages—Mathematics—Metallurgy—Mining—Pathology—Philosophy — Physical Education—Physics—Physiology—Public Law and Jurisprudence —Romance Languages—Miscellaneous Notes.

School of Architecture

At the beginning of the twenty-eighth year of its history the School of Architecture finds itself with its maximum registration. So far 137 students have registered, compared with 117 last year, which was the record at that time. This is an indication of the School's growing reputation throughout the country, and a tribute to the ability and wisdom of its executive head, Professor Hamlin, who is now enjoying a merited and much needed rest in Europe.

Another evidence of the high esteem and regard in which the School is held is shown by the demand for its graduates to fill positions as teachers of architecture. During the past few weeks four universities have applied for Columbia graduates to fill adjunct-professorships in architectural design and engineering.

The teaching staff has suffered a great loss in the death of Mr. Charles Follen McKim, founder of the McKim fellowship, a benefactor of the School from its beginning, director of the McKim Atelier, and supervising architect of the University buildings.

The only other changes in the staff are the promotion of Mr. Warren from instructor to adjunct professor of architecture, and of Mr. Harriman from instructor to associate in architecture. During Professor Hamlin's absence Professor Sherman is acting as the executive head of the School.

Considerable progress has been made towards the establishment of a course in landscape architecture and a descriptive announcement is in preparation. A number of applications have already been received from students intending to pursue this course next year.

The entire school library has been overhauled and classified by Mr. Edward R. Smith, librarian of the Avery Library, assisted by Miss C. C. Gifford. This work was done during the summer months, so that the books should be in readiness for use at the opening of the fall term.

The Columbia fellowship in architecture, awarded in 1909, was won by Mr. W. Lawrence Bottomley, who was graduated in 1906.

TEACHERS COLLEGE

The usual increase in registration is indicated in the statistics of University registration printed elsewhere in this number of the QUARTERLY. In particular, the numbers in the departments of biology, history, mathematics, physics and chemistry are doubled; those in domestic art and domestic science are trebled.

The new School of Household Arts, described in detail in the September QUARTERLY, has opened with a registration of 225 candidates for degrees or diplomas and 125 non-matriculated students in special classes, or 350 students in all. It is probable that this total will be increased to five hundred during the year, upon the opening of various laboratories and studios in the new building which are yet incomplete owing to unavoidable delay in the construction and the importation of necessary apparatus. The largest departments in the school are naturally those which have been transferred from the regular work of the College, namely domestic science, domestic art and hospital economy. But the new departments of household administration, interior decoration and of preparatory training for nurses have begun with good registrations. One of the special classes, a study of the application of domestic science to social settlement work, arranged with the cooperation of the Association for Improving the Condition of the Poor, has attracted especial interest, as have the public lectures on "Food for infants," by Professor Charles Gilmore Kerley of the Polyclinic Medical College.

The organization of the new school has so justified itself that the trustees of the College at their October meeting provided for the elaboration of the department of manual training, the evening technical courses, and related activities into a new school of industrial arts, for instruction in industrial and commercial education, with their foundations in geography, mathematics, nature study and physical science, and their applications in the wood, metal and clay industries and related fields. The College is already offering a series of special classes to meet the needs of teachers of industrial arts and of commercial subjects. The classes for industrial art include work in architecture, chemistry, electricity, mathematics, mechanics, shop-work, plant management, structural design and surveying. In addition to regular officers of the College and University, the instruction is given by practising architects and engineers. The courses in commerce include industrial and commercial history, geography and law, business administration, accounting, and money and banking, and are given by practising accountants, attorneys and bankers, as well as by regular instructors. Both the school of household arts and the school of industrial arts are now to be administered by a director of technical education. This appointment has been conferred upon Professor Frederick H. Sykes, now director of extension teaching.

The opening of the new household arts building has made possible a number of improvements in the main buildings of the College. On each floor there are two new entrances, and on each floor one or more new lecture rooms occupy the space formerly claimed by laboratories that are now located in the new building. Similar changes allow a large increase of space for the Bryson Library on the third floor, and a doubling of space for the educational museum on the second floor.

In May, the trustees established a special teachers' retirement fund for the benefit of such officers and teachers of the college and its schools as may not be eligible to the benefits of the Carnegie Foundation. This fund will provide for officers and teachers, who have been at least fifteen years in service and are fifty or more years of age, an annuity for life of from fifteen to fifty per cent. of their average salary for the last five years. Allowances will also be granted those who are obliged to withdraw from service because of disability. About one-sixth the several hundred thousand dollars needed for the fund will be accumulated from payments by the beneficiaries of two per cent. of their annual salaries. The remainder will be made up from special gifts and from the ordinary resources of the College.

The College has contracted to purchase, at a cost of about two hundred thousand dollars, a ten-acre tract of ground overlooking Van Cortlandt Park, near the terminus of the subway. One third of the ground, a natural plateau about forty feet above the level of the park, will be used as a playing field for the Horace Mann School. The remainder, a finely wooded plateau about fifty feet higher, will be used for dormitories and living accommodations for officers and teachers. A playing field for the school has been much needed since the erection of the Union Theological Seminary buildings on the field formerly used; and friends of the school gave, in June, a fund of twenty thousand dollars, which has been applied toward the present purchase. For two years Whittier Hall, with rooms for three hundred and fifty students, has been unable to meet the full demand of the women students of the College for dormitory accomodations. It is believed that the distance of the new site will be balanced by its rural attractiveness and the possibility of even less expensive dormitory living. A number of professors already live in the College apartments, the Emerson and the Lowell; but there is need for less expensive provision for younger members of the staff, and a general desire for accessible and inexpensive houses as well as apartments in the country. As soon as title to the property is secured, the College hopes to meet all of these needs.

The department of the history of education, under the direction of Professor Paul Monroe, has undertaken the preparation of a monumental encyclopedia of education. Some two hundred collaborators, in various parts of the world, have already been enlisted and the first volume is expected to appear during the present academic year.

The department of elementary education has elaborated an elementary school curriculum based upon the general idea of social efficiency and social service. After having been worked out, detail by detail, in the Speyer Experimental School, the curriculum is now being followed there in its entirety for the purpose of observation, criticism and further improvement.

The department of secondary education has printed for distribution several papers representing the investigation of its most advanced classes. One indicates how the study of anthropology would furnish high school history teaching with a more logical basis, a more human content and a more interesting method of presentation. Another study indicates that the teaching of high school mathematics is apt to be too abstract; a third shows how real and interesting problems may be drawn from astronomy, surveying, manual training, and from industrial and commercial life. A final paper shows how high school language teaching may be made simpler and more effective by correlating new vocabularies, idioms, constructions and terminologies with those of languages with which the student is already somewhat acquainted.

The department of geography is about to issue a report on the teaching of geography in secondary schools prepared by Professor Dodge as chairman of a committee of the Association of American Geographers. The department has added to its equipment a set of meteorological globes, for presenting the seasonal conditions of pressure, winds and temperature over the world.

The department of mathematics has printed for free distribution several facsimile pages from a manuscript of about 1300 A.D., representing the earliest English use of Arabic numerals, and has provided for the use of students an illustrated catalogue of Professor David Eugene Smith's collection of one hundred and twenty-two portraits of Sir Isaac Newton.

The department of music is providing a series of fourteen free public recitals illustrative of various types of music. With the cooperation of a group of conductors, choir-masters and organists of the city, a series of courses is being given in the theory and practice of church music for students who desire to fit themselves to be organists and choir-masters.

The educational museum, of which Professor David Eugene Smith has assumed the directorship, has recently shown an exhibit of bookbindings made by instructors and students, and has in preparation an exhibition of about one hundred samplers from the extensive private collection of Mr. George A. Plympton. Many of these are interesting as illustrating the development of instruction in reading, arithmetic and morals, as well as the development of skill in handicraft. Some of the samplers possess artistic excellence and all of them reflect the characteristics of the time and place of their production, ranging from the period of the Stuarts to the present, and representing America, England, Prussia, Bavaria, the Tyrol, Tuscany, Sicily and France.

The college bureau of publications has recently issued the following publications: "The development of school support in colonial Massachusetts," by George Leroy Jackson, Ph.D.; "The distribution and functions of mental imagery," by George Herbert Betts, Ph.D., and "Later Roman education in Ausonius, Capella and the Theodosian Code," by Percival Richard Cole, Ph.D.

Department of Anatomy

Professor Huntington attended the sixteenth International Medical Congress, held at Budapest, August 29 to September 4, as a delegate from Columbia University, and presented before the section on anatomy and embryology the main results of the investigations which have been conducted in the anatomical research laboratory during the past five years on the development of the lymphatic system. This work is being continued actively this year, and it is hoped that the end results, in correlation with investigations along similar lines in other institutions of this country, will form an important American contribution to scientific anatomy. Other researches at present in progress deal with the comparative anatomy and development of the salivary glands (Professors Huntington and Schulte), ontogeny of the vascular system of Tragulus (Dr. Tilney), comparative anatomy of the venous system in monotremes and marsupials (Professor Schulte), hemicerebellar atrophy (Dr. Strong), the development of the avian lymphatic system (Mr. Coulter), development of the mammalian iliac veins (Mr. Riley), and development of the main systemic veins in mammals (Mr. Heagey and Mr. McLean).

DEPARTMENT OF ANTHROPOLOGY

Professor Boas continued his investigation of the physical anthropology of immigrants and of their descendants, which is being conducted for the immigration commission of Congress. In this work he was assisted by Mr. A. Goldenweiser and Mr. O. Schwarz. He also attended the meeting of the British Association for the Advancement of Science in Winnipeg, and was elected vice-president of the section of anthropology. Mr. Paul Radin spent part of the summer among the Winnebago Indians of Nebraska, continuing his studies on the ceremonials and mythology of the tribe. Mr. Leo J. Frachtenberg visited the Coos Indians of Oregon, whose language, mythology, and ethnology he studied. The tribe is on the verge of extinction, and Mr. Frachtenberg was fortunate in finding among the survivors a few good informants.

Professor Boas attended the twentieth anniversary celebration of Clark University in September and delivered an address on "Psychological problems in anthropology."

DEPARTMENT OF ASTRONOMY

The principal work of this department during the summer has been the instruction in geodesy given at Camp Columbia, Morris, Conn. This work is in charge of Professors Jacoby and Mitchell, who are aided by various temporary assistants. Professor Mitchell also found time to visit the Yerkes Observatory of the University of Chicago, where he spent eight weeks during the early part of the summer. He worked with the 60-foot telescope, photographing the spectra of stars. Measures on a great number of photographic plates led to some interesting results, which have been published in the October number of the *Astrophysical Journal*. The star Beta Trianguli, for example, was found on one date to be increasing its distance from the sun by 30 miles in a second, and at another time two weeks later was moving towards the sun with a speed of 7 miles per second. This variable direction of motion shows that the star which appears single in the telescope really consists of two bodies revolving in orbits; and such stars have been called spectroscopic binaries. Professor Mitchell was fortunate in finding seven such stars among those whose velocities he investigated. Photographic measures are being continued at Columbia for determining the stellar orbits.

Professor Mitchell is delivering this fall his fifth annual course of lectures at Philadelphia before the University Extension Society. Professor Jacoby has given a number of public lectures during October at the University, the Century Club, the Alumni Association of Columbia College, and the Vassar Institute in Poughkeepsie. Professor Jacoby has also taken full charge of the first term work in the introductory astronomical course which has been elected this year by more than forty students in Columbia College. In addition to the classroom work, these students have been divided into four small sections that visit the observatory weekly. Attendance is required irrespective of weather, the method of informal questioning being employed when it is impossible to use the instruments.

During the past summer an expedition of Columbia students was sent to Point Judith to measure the tidal currents in the vicinity of this important and dangerous part of our coast. The party was fitted out under the direction of Professor Charles Lane Poor, who supervised the work from his sloop yacht "Weetamoe." The station boat was the power sloop "Gracie," which was specially chartered for the purpose. The observations were made by Messrs. Brainin and Ladd, and will, undoubtedly, prove of great value by showing the direction and strength of the currents at all hours of the day.

Department of Botany

Two courses were offered by the department of botany during the past summer session. The attendance upon these courses was larger than had been anticipated and overtaxed the resources of the department. The work accomplished, however, was very satisfactory and the results obtained amply justified the addition of these subjects to the list of electives.

Two new cases have been installed in the main hallway of the laboratories for the reception of morphological and class material of the lower plant groups, particularly of the Bryophyta and of the fungi. This is part of a general plan to bring together a complete working collection of all of the great groups of plants; especial attention has been directed towards making this material representative of our local flora. Mention should be made in this connection of the helpful cooperation of Dr. C. A. Darling and Mr. B. O. Dodge, members of the staff, and of several of the graduate students.

Three of our graduate students have practically completed their work for the doctorate. Miss W. J. Robinson during the past summer visited all but one of the islands of the Hawaiian group, and has returned with a very complete collection of the ferns of that region. This work clears up several points relating to the habitat and distribution of the Hawaiian ferns and will enable her to complete her thesis upon these forms. Mr. B. C. Gruenberg has submitted his thesis on the biological relationship between the orchid Corallorhiza and its fungal associations, and Miss M. P. Anderson is completing the text of her doctorate on the ferns of Japan and their relationship. Mr. B. F. Butler during the summer continued the exploration of Montana, visiting regions hitherto untouched and collecting material for his thesis on the flora of the state.

The registration for the present academic year is an unusually large one. Twenty-four students are enrolled in the various graduate courses, of whom eight are candidates for the doctorate with majors in botany and four for the master's degree with majors in botany. Ninety-one students are registered in the undergraduate courses. Of these seventy-four are from the College and schools of mines, engineering and chemistry, and seventeen are registered in extension teaching.

DEPARTMENT OF CHEMISTRY

Goldschmidt Fellowship

The department of chemistry is to be congratulated on the establishment of the Samuel Anthony Goldschmidt fellowship in chemistry, which it owes to the generosity of Mr. George B. Goldschmidt, who has created this fellowship in perpetuity with an income of six hundred and fifty dollars a year. It is to be awarded under the same conditions as the University fellowships. The first incumbent is Mr. Edwin Calvin Kendall, who is conducting a most interesting and promising investigation under the direction of Professor Sherman. Samuel Anthony Goldschmidt received the Columbia degree of engineer of mines in 1871 (he had previously been awarded the bachelor's degree by the College of the

City of New York), and later those of A.M. and Ph.D. in chemistry. In 1871 he was assistant on the Ohio Geological Survey, and from 1871–75 assistant inspector of fertilizers, Savannah, Ga.; he was also at one time assistant to Professor Chandler. Subsequently he was inspector of offensive trades for the Board of Health, and later went on a tour of inspection to the Guano Islands of the South Pacific. He is now president of the Goldschmidt Chemical Works. It is a great satisfaction to the chemical department to have the name of so worthy a graduate perpetuated in so useful a fellowship.

The Summer Session

The summer session in chemistry during 1909 was even more successful than that of the previous year, a substantial increase in the number of students being noticeable. Dr. Hoffman, assistant in organic chemistry, voluntarily gave a course of fifteen lectures on the latest work in organic chemistry as applied to medicine. This course was well attended, and it is hoped that it may become a regular feature in the summer session of 1910.

Electrochemical Laboratory

At the general meeting of the Electrochemical Society held at Niagara Falls in May, papers were read by Professor Tucker and his associates on "The relative efficiency of arc and resistance furnaces in the manufacture of calcium carbide," "The deposition of aluminium from aqueous solutions on a revolving cathode," and "The influence of certain organic compounds in the electrolytic deposition of lead and zinc." Other papers have been prepared upon the various methods of refining iron electrolytically, the manufacture of silundum, and on electrolytic preparation of silicon; these are to be published shortly. A number of graduates have registered in the longer course, which takes in all branches of applied electrochemistry, and it is expected that several important subjects will be investigated, including the fixation of atmospheric nitrogen, the reduction of alumina, and electric furnace methods of refining steel.

Physical Chemistry Laboratory

The number of post-graduates taking this subject as a major for the degrees of A.M. and Ph.D. is much larger this year than ever before, straining the available laboratory space to its extreme limit. Mr. E. G. Thomssen has been appointed assistant, being at the same time a candidate for the doctorate. His research is a continuation of the work on the weight of a falling drop and its relation to the other constants of a liquid, a subject which has been specially investigated in this laboratory during the past three years.

Organic and Sanitary Analysis Laboratory

The courses in organic analysis and food chemistry have been elected by increasing numbers of graduate students, ten of whom have completed their work for the master's degree within the past year with majors in this branch of chemistry. The new summer course in food analysis and inspection was attended by eighteen students, of whom all but one were graduates and most of whom expect to complete the requirements for the master's degree during the summers of 1910 and 1911. Mr. E. C. Kendall, Goldschmidt fellow and candidate for the doctor's degree, is continuing the work in which the laboratory has been engaged during the past two years upon the conditions determining the activity and power of amylolytic enzymes. Several other investigations are in progress or have been completed and published within the past year. Of the students who specialized in organic analysis or food chemistry during the past academic year, five are teaching in colleges and universities, three have been appointed to fellowships (one each in chemistry and biological chemistry at Columbia, and one in chemistry at Wisconsin), three have entered industrial work, and one is studying fermentation industries abroad.

Quantitative Laboratory

During the past year five candidates pursuing major work in this department received higher degrees, three that of Ph.D. and two that of A.M. The work of two other candidates for the degree of A.M. is also nearly completed. Of the three men receiving the doctorate, two have remained at Columbia as tutors, while the third has entered the field of chemical manufacturing. One of the men receiving the degree of A.M. has been appointed assistant in analytical chemistry, the other has received a scholarship for the present year. The class taking required work for chemists and chemical engineering has nearly doubled in numbers this year, there being an attendance of forty as against nineteen last year.

Qualitative Laboratory

Professor J. S. C. Wells has resigned, and the teaching staff has been reorganized as follows: Dr. H. T. Beans, instructor; J. E. Zanetti, Ph.D. Harvard, and William Cabler Moore, B.S., tutors; Wm. C. Uhlig, Ph.D. Columbia, assistant.

Organic Laboratory

The organic laboratory work for the chemical engineers has been transferred from the summer session to the regular winter term. A new course (chemistry 151–2) has been established designed particularly to meet the needs of those especially interested in the application of organic chemistry to the solution of problems in medicine, physiology, etc., and the synthesis and study of individual organic compounds of importance in these fields. Synthetic drugs, alkaloids, essential oils, sugars, fats, and other groups of special interest to the medical profession are considered.

Ross A. Gortner, Ph.D. 1909, has been appointed as chemist in charge of the bio-chemical investigations for the Carnegie Institution's station for experimental evolution at Cold Spring Harbor, N. Y. Alfred H. Kropff, Ph.D. 1909, has returned to Columbia as Professor Bogert's special research assistant.

At the summer meeting of the American Chemical Society held in Detroit last June, several papers were presented embodying the results of investigations carried out in the organic laboratory.

At the Twentieth Anniversary celebration at Clark University, September 14 to 17, Professor Bogert presented papers on "The quinazolines" and on "The teaching of organic chemistry" in the chemical conferences, and at the public session of September 16 he delivered an address upon "Chemistry and conservation."

Industrial Laboratory

Professor Pellew delivered a course of public lectures at the University during October and November on "Practical dyeing," discussing the following subjects: Dyeing of cotton with modern dyestuffs, Tied and dyed work, Dyeing and adulteration of natural silk, and Manufacture and dyeing of artificial and imitation silk. This was the first series of University lectures delivered this year under the auspices of the faculty of fine arts.

Mr. B. G. Feinberg has been appointed laboratory assistant in industrial chemistry.

Elementary Chemistry

Chemistry A has entered on its first year as a full year course with 97 students (90 College and 7 Mines, Engineering and Chemistry) attending lectures and laboratory. Dr. Neish is assisted in the laboratory by R. B. Brownlee, A.B., Ben M. Jaquish, B.S., and Claude F. Walker, Ph.D., each instructor thus having charge of not more than twenty-five students.

Department of Clinical Pathology

During the past summer very extensive alterations have been made on the fourth floor of the northeast wing of the college building to permit of the expansion of the work of the department, which had become somewhat cramped in its old quarters. Three small workrooms and one large general laboratory have been constructed, which, with a separate chemical room for special work, afford opportunities, previously impossible, to students and advanced workers. The trustees of the University have given a sufficient fund to equip the laboratory with the requisite apparatus, including all of the more elaborate instruments for research in chemical pathology. In consequence of these changes it has been possible to increase the extent of the course in clinical pathology by about twenty per cent. and also to offer an advanced course in medical chemical analysis to small sections. In addition to these advantages, the reconstruction of the laboratory at St. Luke's Hospital, now under the direction of the professor of clinical pathology, will afford a remarkable opportunity for graduates who wish to carry further such chemical and pathological studies as they may have begun either in the regular course in the medical school or in hospitals after graduation.

Department of Dermatology

Last year the resignation of Professor Fox was followed by the promotion of Dr. George T. Jackson to the professorship, and of Dr. John H. P. Hodgson as chief of clinic and instructor. Dr. C. W. McMurtry was added to the staff of clinical assistants. A complete reform was made in the method of teaching. In place of the former weekly clinic, held in the amphitheater before the students of the third year, the class was divided into sections, and now meets Professor Jackson in the teaching room of the clinic twice a week for a quarter of the year for each section. The more common diseases of the skin are presented systematically and illustrated by patients and colored plates, one half of each hour being given to a didactic lecture, and the other half to the presentation of patients. In this way every student has an opportunity to study every case, and is encouraged to ask questions. The students of the fourth year spend their time in practical work under the guidance of Dr. Hodgson. That the students appreciate the method of teaching is evidenced by the fact that more students are always present than properly belong in the respective groups. A new room has been assigned to the department, which the director is fitting up as a pathological laboratory. X-ray and high-frequency apparatus will also be installed by him in this room, so that the students may become familiar with the use of these agencies. An optional course in the pathology of the skin will be offered by Dr. Rainforth. When these additions to the department are in operation, the college will be in possession for the first time of an up-to-date equipment for the teaching of dermatology.

Departments of Economics and Social Science

Professor Clark's book on "The distribution of wealth" is soon to appear in an Italian translation. Professor Seligman's book on "The economic interpretation of history" is being translated into French. This is the fourth of his books of which French translations will have appeared. The new fourth edition, revised and enlarged, of Professor Seligman's "Principles of economics" has just appeared.

Professor H. L. Moore is spending his sabbatical at work in the statistical laboratories in France and in the laboratories of Messrs. Galton and Pearson in England. Professor Moore has in course of preparation a comprehensive work on the relation of statistics to economics. A new volume of the Series in History, Economics and Public Law is the work on "Divorce: A study in social causation", by Dr. James P. Lichtenberger, who took his examinations in the spring, and now occupies the professorship of sociology at the University of Pennsylvania. Dr. Lichtenberger's work is based, so far as the statistics are concerned, on the recent report of the census, but it covers a much wider field.

The Academy of Political Science in its rejuvenated form is prospering. Over seven hundred new members have been added during the past few months, since the spring meeting, which was devoted to the tariff. The autumn meeting, which will be held in November or December, is to be devoted to a series of discussions on "The economic position of women," and is expected to attract much attention. The Academy will also be the host at a large reception to be given to the members of the American Historical Association and of the American Economic Association at their joint celebration during the Christmas holidays. On November 1 Mr. George Paish, editor of the London *Statist* and a member of the council of the Royal Statistical Society, delivered a lecture at the University under the auspices of the Academy upon "The English budget and social reform."

A paper by Professor Seligman on "The relations of federal and state finance" was read at the International Tax Conference held in Louisville the end of September. The paper was read in Professor Seligman's absence by the delegate of Columbia University, Dr. Oscar L. Pond, of Indianapolis.

Professor Henry C. Emery, the chairman of the new tariff commission, is a graduate of the school of political science. His doctor's thesis on "Speculation in the stock and produce exchanges" figured prominently in the deliberations and report of Governor Hughes's recent committee on the exchanges, of which Professor Clark was a member.

An important acquisition to the teaching force in economics has been made by the appointment of Professor Henry R. Mussey, a graduate of the school of political science, who has had a successful career both at Bryn Mawr and at the University of Pennsylvania. He is to devote most of his time to undergraduate teaching at Barnard, but will also take charge of the graduate course on "Commerce and commercial policy."

Under the auspices of the extension department a number of courses on economic and commercial subjects will be open for the first time this year to evening students.

Professor Simkhovitch's series of articles on "Marxism and socialism," which have been running during several numbers of the *Political Science Quarterly,* have attracted wide attention, and will, when completed, appear in book form.

The classes in social economy are the largest since the department was established, numbering altogether about eighty students. On account of its size the seminar is meeting in two sections this year, those students who are especially interested in social legislation working with Professor Lindsay, while those whose primary interest is social work are under the immediate direction of Professor Devine. In Professor Lindsay's section of the seminar one student is working on the laws relating to immigration, another on the regulation of the work of women and children, another on the personal rights of women, while several will study the social legislation of individual states. Three students in Professor Devine's section are working on different aspects of the causes of immorality and other forms of delinquency among girls. The prevention of infant mortality, social consequences of industrial accidents, the education of the immigrant, the urbanization of the Italian immigrant, a social program for a small town, the education of girls for rational living in New York City, and eyestrain as a cause of inefficiency, are other subjects which are being taken up.

The New York School of Philanthropy opened on September 27 with an enrollment of ninety-nine students, fifty-nine in the school proper, of whom forty-five registered for the full course. Dr. E. Dana Durand, director of the census, gave the opening address on "The importance of accurate census statistics for social workers." The bureau of social research, established in the school two years ago on the Russell Sage Foundation, is concentrating its efforts this year on a survey of a selected area of New York City.

The Kennedy lectures in the School of Philanthropy for the year 1909 were delivered by Professor Devine on the subject of "Misery and its causes." Two of the lectures in the course of training in child-helping, given under the direction of the Children's Bureau of Philadelphia, will be delivered by Professor Lindsay.

At the conference on infant mortality, which was held in New Haven on November 11 and 12 under the auspices of the American Academy of Medicine, the section on philanthropic prevention met under the chairmanship of Professor Devine.

Department of Electrical Engineering

Last year instruction in the alternating current laboratories was given for the first time to all fourth year engineering students, the laboratory attendance numbering one hundred and thirty-eight men. This division of departmental work was thereby naturally taxed to its utmost capacity. To conduct the work satisfactorily, it was found necessary to employ a schedule of experiments which assigned definite work to the students from the opening of the term, and the same procedure will be followed this year.

Many gifts have been received by the department during the past year, among which may be mentioned a complete collection of different forms of incandescent lamps, as well as an exhibit of cables and cable joints as employed in the conduit systems of New York, from Mr. J. W. Lieb, Jr., of the New York Edison Company; a collection of high tension insulators and terminal bushings from the Electrose Manufacturing Company of Brooklyn; a new type motor starter from the American Electric Fuse Company, and a complete Edison storage battery from the Edison Manufacturing Company of East Orange, New Jersey; also a 1/10 K. W. transformer from the Westinghouse Company, and a photo-engraving lantern from the C. J. Bogue Company.

The equipment of the machine laboratories has been enlarged by the purchase of several Weston ammeters for alternating current measurement and two wattmeters with potential transformers, while the continuity of power supply has been more certainly assured through the introduction of circuit-breakers on all test-tables and feeder-circuits. The instrument laboratory equipment has been improved through the addition of a 600 ampère Kelvin balance. A complete cable testing outfit has also been added, and this will be used by the students for the determination of the insulation resistance and electrostatic capacity of insulated electrical conductors. The departmental photometric laboratory, situated in Havemeyer Hall, has been greatly enlarged for the purposes of conducting studies on arc and incandescent illumination.

The service of the department as electrical testing laboratory for the city has been continued along the lines set forth in the contract entered into between the Department of Water Supply, Gas, and Electricity and the University authorities in 1906. This work covers the testing of consumers' electric meters and the examination and approval of all manner of new devices for the control and utilization of electricity. Four hundred and forty-seven meters have been tested and over seventy new devices have been examined and reported upon. This field of work is of great importance not only in that it has made the department an important factor among the electrical interests of this city, but also because it enables our students to become acquainted with the most modern forms of appliances used in certain branches of their profession.

Professor G. F. Sever has been engaged in the conduct of the electrical testing and inspecting required by the contract between the city and the University. He has also been active in improving the photometric equipment and schedule of experiments in the instrument laboratory.

Professor Crocker has been granted a leave of absence, during the continuance of which Dr. M. I. Pupin, professor of electro-mechanics, will act as administrative head of the department. Professor Crocker's lecture courses will be divided among the members of the department and several non-resident officers, who will act as lecturers in subjects in which they are specialists. Mr. C. O. Mailloux will give a series of lectures upon electric railroads, electric power distribution, engineering contracts and specifications; Mr. Percy H. Thomas will lecture upon high tension power transmission, line disturbances and protection, and switchboards; Bancroft Gherardi, chief engineer of the New

York Telephone Company, will lecture upon telephone engineering; Thomas Ewing will deliver a series of lectures upon patent law and its importance in the electrical field, and Charles E. Knox will lecture upon the problems of plant management.

Stanley F. Bond, tutor, and Hanford C. Adams and James E. Wilson, assistants, have resigned to take up commercial work, while the following have been appointed to positions in the department: Cyprian O. Mailloux, associate; J. Harold Morecroft, instructor; Frederick W. Hehre, tutor, and Frank L. Mason, assistant.

DEPARTMENT OF ENGLISH

The present registration in the graduate department shows an enrollment of 408 in the ten courses and of 43 in the four seminars. It will be noted that this is an average registration of 38 students for each course; four courses have an attendance of over 60 each. All of these courses and seminars are open only to graduate students. There are 144 students taking English as a major and 70 taking it as a minor subject, an increase over last year in the number of major students of 28 per cent. The enrollment in the three English graduate courses in the summer session showed an attendance of 98 students.

The following former students have been recently appointed to the positions stated: Colin C. Alexander, A.M. 1907, instructor, University of North Carolina; M. LeRoy Arnold, graduate student 1906–09, head of English department, Hamline University; Martha W. Beckwith, A.M. 1906, instructor, Vassar College; Elizabeth C. Cook, A.M. 1902, assistant, Barnard College; Mary Coplin, A.M. 1909, teacher, State Normal School, Glenville, W. Va.; Robert S. Forsythe, A.M. 1909, instructor, University of Kansas; Edward H. Gardner, A.M. 1908, instructor, University of Wisconsin; Harold C. Goddard, Ph.D. 1908, professor, Swarthmore College; Laurence G. Grose, A.M. 1909, assistant, Brown University; Herbert F. Hamilton, graduate student 1908–09, assistant professor, Amherst College; Harry F. Harrington, A.M. 1909, instructor, Ohio Wesleyan University; Mary L. Hunt, graduate student 1907–09, instructor, Vassar College; William Ellery Leonard, Ph.D. 1904, assistant professor, University of Wisconsin; Frank H. Ristine, A.M. 1907, assistant professor, Wabash College; Frederick W. Roe, Ph.D. 1909, assistant professor, University of Wisconsin; Robert M. Smith, A.M. 1909, head of English department, Muhlenberg College; Charles W. Snow, graduate student 1907–09, instructor, Bowdoin College; Rupert Taylor, A.M. 1906, tutor, Trinity

School, New York City; Russell D. Trebilcox, A.M. 1909, head of English department, Wyoming Seminary; Samuel M. Tucker, Ph.D. 1908, dean, Florida State College; William H. Vann, A.M. 1909, assistant professor, Furman University; Thomas H. Wade, A.M. 1909, assistant, Brooklyn Polytechnic Institute; Blanche C. Williams, A.M. 1908, tutor, Teachers College.

There has been a very marked interest in the courses offered by Professor Otto Jespersen, visiting professor of English philology from the University of Copenhagen. Many teachers in New York and the vicinity as well as regular students in the department welcome the opportunity to study under a scholar already well known to them by reputation and by his publications. In addition to his seminar in studies in English syntax, Professor Jespersen is giving two courses. The course on historical English grammar has a registration of nearly seventy students. The registration in his course in phonetics includes students from practically every department in the University which gives linguistic instruction. During the past few years the interest in the study of language has been growing in the department of English, and has resulted in two doctor's dissertations on linguistic subjects, which have recently appeared. There can be no doubt that the visit of Professor Jespersen will greatly stimulate this side of the department's activities.

During the second semester of the present year the department will offer a graduate course on contemporary literature. This course will consist of fifteen lectures, which will probably be given Tuesday afternoons at four o'clock. The lectures will not be open to the public, but will be strictly reserved for graduate and advanced students who register for the entire course. The subjects and dates have not been finally determined upon, but the following tentative list indicates the character of the course: Richard Watson Gilder, "Poetry"; Paul Elmer More, "The function of criticism"; William Allen White, "The literature of agitation"; Hamilton Mabie, "The human appeal of literature"; Augustus Thomas, "The drama"; F. Hopkinson Smith, "The short story"; Robert Herrick, "The novel"; Edward Cary, "Journalism"; Ida Tarbell, "The magazine"; Frank M. Colby, "The literature of information"; Peter Dunne, "American humor"; Henry Holt, "The publisher"; Henry Van Dyke, "Contemporary literary ideals"; John LaFarge, "The literature of the fine arts."

The Women's English Graduate Club was organized last year by the women students of the department, and is continuing its second year of successful work.

The Men's English Graduate Club organized on October fifteenth for its sixth year, with Mr. Carl C. Van Doren as president and Mr. Rupert Taylor as secretary.

Department of Geology

At the close of the final examinations in May the officers of the department accompanied the third year School of Mines students and several men from the College and the graduate schools to Pottsville, Pa. Making this city of the southern anthracite basin headquarters, the quadrangle which had been topographically mapped by the U. S. Geological Survey as the Pottsville sheet was covered by the party during the week which could be devoted to field work. The party, numbering about seventy, succeeded in completing the map and also in seeing something of anthracite mining.

The month of June was employed by Professor Kemp in finishing for the N. Y. State Geological Survey a bulletin upon the geology of the Port Henry and Elizabethtown quadrangles of the eastern Adirondacks. Early in July Professor Kemp went to the lead-silver district of the Coeur d'Alenes, Idaho, and spent six weeks at Wardner. On the return journey ten days were spent with Reno H. Sales, 1900 S, chief geologist for the Amalgamated Copper Company, in the mines of Butte, Mont.

The Eleventh International Geological Congress will be held in August, 1910, in Stockholm, Sweden. The committee in charge is making a special feature of a volume which will treat of the iron-ore reserves of the various countries of the world having important deposits. At the request of the committee in charge, Professor Kemp has prepared the articles upon the United States and its outlying possessions, upon the West Indies, Central America, and parts of South America.

In the summer session Professor Grabau conducted three courses, one on general geology with an attendance of twenty-five, one on elementary palæontology, with an attendance of seven, and one on principles of geology with an enrollment of eleven, mostly graduate students. On Saturday field trips to various localities about New York were made, including one all-day excursion to the Cretacic section of the Atlantic Highlands. After the close of the summer session a party of eleven of the students spent three days at Becraft Mountain near Hudson, N. Y., studying the stratigraphy and structure of this outlier under the guidance of Professor Grabau, and collecting fossils.

Half of the party then went to the Catskills to study the upper Devonic, while the others accompanied Professor Grabau to Boston, where a day was spent in the study of the intricate structure and the stratigraphy of Nahant, and another in the study of the origin of Nantasket beach, the volcanics of Allerton and the glacial Lake Bouvé, described by Crosby and Grabau. A short time was also spent at the interesting Cambric ledges at Weymouth, where the Etcheminian fauna was discovered some years ago.

Dr. Berkey continued work for the N. Y. State Geological Survey and kept in touch with the progress of the explorations being made by the City of New York in connection with the new water supply. Short trips were made into Connecticut and Virginia in connection with other problems. Jesse E. Hyde, assistant in the department, served as assistant geologist on the Geological Survey of Ohio during the months of February, March and April, 1909, and was engaged in the study of collections from the Waverly formations of Ohio. The months from May to September were largely devoted to field work on the same formations in southern and central Ohio, and to the physiography of the area covered. Miss Elvira Wood, curator in palæontology and candidate for the Ph.D. degree, is continuing her study of the phylogeny of the genus Cerithium begun in September, 1908. D. D. Condit, scholar in geology, served during the summer as assistant geologist on the Geological Survey of Ohio. F. K. Morris, candidate for the A.M. degree, spent two weeks in western New York in July, continuing work commenced last summer. The work, mainly palæontological, was a detailed study of the Hamilton shales and limestone, exposed in the bed of Morse's Creek, at Athol Springs, some ten miles south of Buffalo. During the balance of the summer Mr. Morris was engaged upon an investigation of the fauna of the Michigan Hamilton. Material was supplied by Dr. Grabau, and the work was designed to assist Dr. Grabau in his larger study of the geology and palæontology of the Traverse region of Michigan. A special study of the genus Stropheodonta was started in connection with this work, and this is now nearly complete. Paul Billingsley, a candidate for the doctorate, spent several weeks in the spring and fall in the Shawangunk Mountains of Ulster Co., N. Y., and the Kittatinny Mountains, their prolongation into New Jersey. The historic sections in Pennsylvania, where the Susquehanna, Schuylkill, Lehigh, and Delaware rivers cut the range, were also visited.

In the summer months a field party, consisting of Messrs. Barrows, Martin, and Billingsley (all graduate students in the department), was located on Manitoulin Island, Lake Huron, and the mainland to the north. They obtained measurements and fossils from the Paleozoic rocks on the island, with a view to their more accurate correlation. Some time was also spent in leveling and mapping the oil region about Gou Bay, Ont., where the well records have much stratigraphic value. On the north shore the party worked in the Huronian and Laurentian rocks. As a result of the summer's work, in which nearly eight hundred miles were covered by boat and canoe, material has been collected from the entire geologic column found in the region studied.

The dissertation of Thomas Brown, " Studies on the morphology and development of certain Rugose coral," was published by the New York Academy of Sciences. Dr. Brown has been appointed professor of geology in Middlebury College, Vermont. The A.M. thesis of Miss Wood, " A critical summary of Troosts' unpublished manuscript on the crinoids of Tennessee," was published by the Smithsonian Institution.

The department has received an extensive collection of recent shells and other invertebrates from Dr. Geo. A. Ferguson, 1908, the collection having been made by his father. It will be of great value in the research work on the phylogeny of the mollusca carried on in the department, as well as for purposes of comparison. A valuable collection of the tertiary species of Planorbis from Steinheim, Württemberg, has been received from Oberförster Gottschick of Steinheim, through the mediation of Mr. Erich Goede, a friend of the department. This is one of the few collections of this famous series of shells in this country. Much material has also been added to the palæontological museum by collections made during the year.

Department of Germanic Languages

At the October meeting of the trustees Professor Carpenter was appointed acting dean of the graduate faculties during the absence on leave of Dean Burgess. Professor Thomas delivered an address on " Schiller as a realist " at the celebration held by the Morrisania Literarische Gesellschaft on November 10 to commemorate the 150th anniversary of the birth of Schiller. Last year the first part of his " Anthology of German literature " was published by Heath & Co., and the complete work was issued this fall. This book is designed as a text-book for a general course in German literature and gives extracts from all of the literary periods, some of the older selections having been turned into modern German verse by Professor Thomas himself. On June 30 Professor Bagster-Collins gave a lecture at the New York meeting of the Nationaler Deutsch-Amerikanischer Lehrerbund on " Betrachtungen auf dem Gebiet des fremdsprachlichen Unterrichts." Professor Tombo delivered the German oration at the Schiller celebration of the united German societies of Buffalo, on November 10, and at the anniversary meeting of the Gesellig-Wissenschaftlicher Verein of New York on the following day. While in Buffalo he delivered Schiller addresses in English at the Lafayette and the Masten Park high schools. On October 25 he spoke at the Brooklyn Polytechnic Institute Preparatory School, and on October 28 lectured in German before the Morrisania Literarische Gesellschaft. He has also been lecturing for the New York Board of Education at various centers in the boroughs of Manhattan, Brooklyn and Queens.

During the week beginning August 23 Professor Remy gave a course of five lectures dealing with medieval German literature and romanticism before the Champlain assembly of the Catholic Summer School at Cliff Haven, N. Y. On November 14 he lectured on " Zoroaster and the Avesta " in the series of lectures on the religions of the world delivered at the Mount Morris Baptist Church. Mr. Heuser delivered a lecture in German on " Heinrich Heine " at the Brooklyn Labor Lyceum on October 24, and on " German universities " at Public School No. 158, Manhattan, on December 3. Dr. Richard delivered addresses in August at Buffalo and at Rochester on " The Germanic conception of liberty and its development in Germany, England and America." On October 4 he lectured at Cincinnati on " Die Grundlagen und Ziele der modernen Friedensbewegung " before the Nordamerikanischer Turnerbund, and repeated the lecture in English the following day before the Cincinnati Peace Society. He also addressed the National German American Alliance on October 5 and 6 on " Civic virtues," " Forest preservation in the United States," and " Protection of life and body in the United States."

Dr. Max Friedlaender, professor of the history and science of music in the University of Berlin, gave a lecture-recital on " Das deutsche Volkslied " under the auspices of the Germanistic Society of America on October 21. This was the first of a series of biweekly lectures on German music given at the University by the Germanistic Society in cooperation with extension teaching.

The registration in the department for the academic year 1909–10 shows a gratifying increase in the graduate courses, so that in graduate enrollment Germanic languages and literatures has progressed from fifth to fourth place since last year. Forty-seven students have a major in the department this year, and forty-one a minor. In Columbia College 251 students are enrolled in German courses, in Barnard College 340, and in Teachers College 23. The registration in the summer session also showed a marked increase, thirteen courses being taken by 251 students, 86 of whom were graduates. If to these figures be added the enrollment in a graduate course on "Methods of teaching German" given by Professor Bagster-Collins under the auspices of the department of education, the total for the summer session becomes 271, with 106 graduates.

Department of History

Some readjustment of work has been necessitated this year in the department of history through the considerably increased registration in nearly every course and also on account of the absence on leave of Professors Osgood and Botsford. The latter's work at Barnard and under the faculty of political science is given by Mr. Huth, sometime fellow in European history at Columbia and instructor last year at Syracuse. For the lecture system that has prevailed in History A in Columbia College for several years, has been substituted the older and apparently better system of dividing the class into sections that meet the same instructor three times a week: Dr. Hayes, who is in general charge, has three sections; Mr. Huth has one; and the two other sections meet Mr. Sait, who has returned to Columbia after a year at the City College. Mr. Sait also gives the course in English history in Columbia College, and assists Professor Beard in Politics 1–2. History A is given at Barnard, as hitherto, by Professor Shotwell and Miss Huttmann. The work of Professors Dunning and Robinson remains practically the same.

The course in modern European history (History 9–10) shows this year an unprecedented increase in attendance. Professor Shotwell continues to lecture twice a week to the Columbia and the Barnard sections, but a new plan has been evolved to increase the usefulness of the course. At Columbia, room 716 Hamilton has been equipped as a special proseminar room with convenient reference books of modern history and files of the most important European newspapers; and the students are to devote half their time for History 9–10 to the study of current topics under the direction of Dr. Hayes.

At Barnard, similar work is in charge of Miss Juliet S. Points, who has been made assistant in history.

In the summer session the work of the department was carried on by Professors Botsford, Cheyney (of the University of Pennsylvania), and Basset (of Smith College), and by Dr. Hayes. Seven courses were given, including History A, which was offered for the first time in a summer session. In extension teaching the work of the department is offered by Dr. Hayes and Messrs. Huth and Sait.

During the week of May 27 Professor Sloane attended as American delegate the meeting of the International Olympic Committee at Berlin. Professor Shepherd, who was obliged to undergo treatment for his eyes in Germany during the greater portion of the summer, returned to the university early in October and is now engaged in the preparation of his atlas. In addition to his regular graduate courses in Latin-American history, he continues to give the course in American history at Barnard. Professor Shotwell spent the summer at Chicago University. He offered a graduate course on the industrial revolution, which was attended by about seventy students. Professor Johnson of Teachers College passed the entire summer investigating historical instruction in the *lycées* and *collèges* of France.

Of the instructors now absent on leave, Professor Osgood began in July the study at London of the British Board of Trade papers. He hopes to complete these before the close of the year and will then take up the Treasury and Admiralty papers covering the period from 1690 to 1760. Professor Botsford, after teaching in summer session and publishing his work on Roman Assemblies, sailed for Europe in August; he expects to devote himself to special research work at Rome during the greater part of the academic year.

DEPARTMENT OF INDO-IRANIAN LANGUAGES

A memorial volume in honor of Dastur Hoshang, the late Zoroastrian high priest of Poona, is being edited by a committee of the Parsis of India. It will contain a number of contributions by officers and students of the department.

By invitation of the trustees of the General Theological Seminary, Professor Jackson is delivering at the seminary a course on comparative religion.

Ervad M. N. Dhalla, who studied at the University, chiefly in this department, for more than three years, receiving the Ph.D. degree in

1908, has just been made Dastur (high priest) of the Parsis of Sind, the Panjab, and Baluchistan. Kentok Hori, formerly a student in this department, has been appointed instructor in Indic philology in the University of Tokio.

DEPARTMENT OF METALLURGY

The summer school in metallurgy spent six weeks in the field during June and July, visiting important plants in the east and the west. In the vicinity of New York several large smelting and refining plants were inspected, and later the class went to the iron and steel metallurgical plants in Bethlehem, Harrisburg, and Pittsburgh, and to the new mammoth plant at Gary, where iron and steel metallurgical operations were carefully studied. The students then went to Colorado and studied lead smelting at the large smelteries in Denver, Pueblo, and Salida. At Colorado Springs the cyanide and chlorination plants were visited and a side trip made to Cripple Creek. At Leadville a short time was spent in underground visits to the Iron-Silver mine and the Yak tunnel, after which the class went to Salt Lake City. Here the mines of the Utah Copper Company were visited, as well as the big concentrating plant, belonging to this company, at Garfield. Copper smelting and converting were studied at the large Garfield plant of the American Smelters Securities Company. The classes during this trip were in charge of Professors Walker and Campbell and Dr. Kern.

Professor Walker, after completing the summer school work, visited the zinc smelteries at Bartlesville, Oklahoma, and on his return spent several days at the United States Metals Refining Company's electrolytic lead refinery at Grasselli. Later in the summer he made a professional trip to a nickel property in North Carolina. Professor Campbell continued his studies in the iron and steel district, and afterwards visited the large wire-mills at Worcester, Mass., and other manufacturing plants in that state. Dr. Kern went to Montana and visited the large copper smelteries at Anaconda. On his return he spent nearly two weeks at the vanadium mines and extraction works of the Vanadium Alloys Company, and the Cyanide works at Telluride.

Professor Howe attended the annual meeting of the American Society for Testing Materials and presided at one of the sessions. He has been appointed a member of the visiting committee of the United States Bureau of Standards. Professor Campbell has been elected to membership in the Iron and Steel Institute, and has acted as secretary of the section of astronomy, physics and chemistry of the New York Academy of Sciences for the past year.

DEPARTMENT OF MINING

During the past summer thirty-nine students were engaged in mining field work. The entire class were first given a week's practice in underground surveying at an iron mine near Dover, N. J. As in former years the students then proceeded, in separate squads or individually, to mines in the west and elsewhere, where arrangements had previously been made and privileges secured for the required note-taking and sketching. Several members of the class obtained positions at mines, and worked all summer in fulfillment of the requirements; but most of them devoted all of the allotted time to observation and study.

The students were rather widely scattered, eight going to the Lake Superior copper and iron districts, four to the Butte, Montana, copper mines, three to the Missouri zinc and lead mines, seven to gold and silver mines of Colorado, two to the mines of the Tennessee Copper Company, two to Idaho, five to Pennsylvania collieries, two to Arizona, one to Utah, two to Mexico, one to New Jersey iron mines and one to Cobalt, Canada. Further details are given in the *School of Mines Quarterly* for November.

DEPARTMENT OF PATHOLOGY

A number of new appointments have been made in addition to that of Professor MacCallum, which has already been mentioned. Dr. Hugh Angus Stewart has been made adjunct professor of pathology; Dr. A. M. Pappenheimer and Dr. Isaac Levin, associates; and Drs. Frederic Moir Hanes, Edwards A. Park, and Hugh Auchincloss, instructors. This year the departments of bacteriology and clinical pathology are entirely independent of that of pathology, and histology and embryology have been transferred to the department of anatomy. In the teaching of pathology itself, an attempt has been made to give the students fuller privileges and facilities in the attendance on and performance of autopsies in various hospitals. Quite wide hospital connections have been formed or maintained, so that the gross pathological material is excellent. It is planned to introduce into the teaching, as far as possible, experimental and chemical methods, especially to demonstrate disturbances of function. For this purpose it has been necessary to provide improved facilities for work, and accordingly rooms for experimental research have been built into the main laboratory and fitted with the required apparatus. Less extensive but still useful facilities for chemical work have been arranged also. But the most important change is in the construction of a large building upon the roof, consisting of a number of rooms for the proper accommodation of animals, together with certain rooms for research purposes. A great deal of modern surgical and physiological apparatus has been installed in the laboratory and is available for the more advanced research work. It is hoped that the demonstrations and lectures may be made more instructive by the use of the new Leitz epidiascope, which is to form part of this equipment. The collections of the museum, which formerly filled a large room at the east end of the laboratory, have been distributed through the building in order to provide new quarters for the department of clinical pathology. Recent legislation by the faculty of pure science makes pathology an available subject for the degrees of master of arts and doctor of philosophy. A fund recently established gives exclusive support to investigations into the nature of cancer, and at present Dr. Isaac Levin and Dr. R. A. Lambert are actively at work along this line. It is hoped that this work, difficult and unpromising as it may at first appear, may be extended greatly in the course of the year.

Department of Philosophy

Graduate work in the department was represented in the summer session by four courses, this being the largest offering yet made by the department in summer session. The courses were well attended, and a number of the students who began their work at Columbia during the summer have continued it with the opening of the regular academic year.

Professor Lord has changed the character of the course Psychology 1–2 so as to devote a large part of the second semester to the study of social psychology as the proper foundation of all the social sciences. This will also still further differentiate Psychology 1–2 (general) from Psychology 3–4 (experimental). The latter is necessarily devoted more particularly to the analysis of the cognitive processes, while the former undertakes to study the observed workings of instincts and the sentiments based on them in the formation of character in the individual as well as institutions and customs in society.

Professor Woodbridge made an address on the subject of the ethics of gambling at the Episcopal Church Congress in Boston last May. At the same gathering Professor Miller spoke on psychotherapy. Professor Miller preached at Amherst College and at Smith College on May 30. He also delivered the Phi Beta Kappa address at the commencement of Hobart College.

Dr. Cooley's dissertation on "The individual" has been published. He is giving a new course entitled "Types of theistic theory." W. B. Pitkin, who was formerly a tutor in the department, has been appointed lecturer in philosophy for the current year to fill the vacancy caused by the absence of Professor Fullerton on leave.

Department of Physical Education

The improvements made on South Field have added very materially to the facilities for physical education and recreation at the University. All the students in the two lower classes of the College and the schools of mines, engineering and chemistry meet on South Field two hours a week and receive instruction in track and field athletics. This work is done as a part of the required courses Physical Education A and B. When the weather became unsuitable for outdoor work, the classes were transferred to the gymnasium. Both students and instructors are enthusiastic over the new arrangement, and the outdoor work will undoubtedly serve to discover latent athletic talent in students who ordinarily would not take any interest in athletics.

Besides the eighteen weekly classes in the prescribed courses, the department offers six optional classes open to students in the upper classes and the professional schools, and the alumni; two classes in advanced swimming and methods of life-saving, open to all students and alumni; and three classes open to officers only.

Two new hand-ball courts and a new floor in the auxiliary gymnasium are valuable additions to the equipment. New lights and other improvements in the swimming pool are greatly appreciated by the hundreds of students and officers who frequent the pool every day.

Department of Physics

The following new appointments have been made to the staff of the department since June: Associate for the second half-year, John S. Shearer, B.S. Cornell University 1893, Ph.D. 1901, instructor in physics 1893–1903, assistant professor 1903–, absent on leave; associate, Charles H. Burnside, B.S. (in architecture) Columbia 1898, A.M. (in mechanics), 1899, instructor in mechanics, University of Wisconsin, 1900–03, assistant professor of mechanics, 1903–, absent on leave; lecturer, Frank Fayette Almy, B.S. Nebraska 1890, student at Johns Hopkins 1890–93, Chicago 1899, 1901–02, professor physics, Iowa College 1893–, absent on leave; tutor, Hermon Waldo Farwell, A.B. Dartmouth 1902, A.M. 1906, assistant in physics, Barnard College, 1908–09, *vice* K. G. Falk, who resigned to accept a research fellowship at the Massachusetts Institute of Technology; and the following assistants: W. A. Mitchell, A.B. Trinity 1901, assistant in physics, Columbia 1904–05, professor of physics Soo Chow University 1908–, absent on leave; Ancel St. John, Ph.B. Rochester 1906, instructor in physics, Beirut 1906–09, and A. W. Jackson, A.B. 1907 and A.M. 1909, University of Oregon.

Mr. Henry H. Marvin, B.S. Iowa College 1906, teacher in Grinnell high school, 1906–08, graduate student, Columbia, 1908–09, has been appointed Tyndall fellow, *vice* Harold W. Webb, who resigned to become instructor in physics. Mr. Marvin will continue an investigation on the optical properties of chlorides in the Phœnix laboratories, instead of going abroad for study as is customary for the Tyndall fellow.

Pending the appointment of a successor to Professor Nichols, it has been the good fortune of the department to secure for this year the services of several professors who have been granted leaves of absence by their respective institutions for this purpose. Professor Almy of Iowa College has been for some time very favorably known to the members of the department through the graduate students who have come here from him. His influence as a teacher is well attested by the fact that so many of his students have been inspired to become physicists, and he has sent more graduate students to Columbia than any other teacher. Professor Almy teaches sections of the first year applied science students and is in charge of the laboratory work of the College students. Professor Burnside comes to assist in teaching the large undergraduate classes in mechanics. The department has arranged to have a "trailing section" of the second year applied science mechanics course, given in the fall term by Professor Burnside, so that students who have to repeat the course, which is a prerequisite for several other important courses, need not be thrown back an entire year in their work. Professor Shearer, who has charge of very large classes in general physics at Cornell, will come to Columbia in February. His chief work will be the first year course for applied science students, but in addition he will offer a graduate course on the theory of physical optics, taking over the lectures of Professor Hallock, who will be absent on sabbatical leave the second half-year.

Department of Physiology

The sets of journals and modern books forming a large part of the valuable library of Professor Curtis have been installed in a room of the department, and it is hoped that a sufficient sum of money may be raised to secure them permanently for the university. With the retirement of Professor Curtis, Professor Burton-Opitz was made the administrative head of the department for the present year. He is giving the required course of lectures in physiology to the students in medicine. Dr. Emerson read a paper on " Blood pressure in tuberculosis " before the American Society for the Advancement of Clinical Research at Washington in May. The data and results presented in the paper were obtained clinically at the Seton Hospital, and experimentally in the department of physiology. During the summer at the Harpswell laboratory on the coast of Maine, Professor Lee and Dr. Max Morse completed successfully their investigations of the physiological phenomenon of summation of stimuli. Professor Lee has recently given the following addresses: " The nature of fatigue " before the Connecticut State Teachers' Association at New Haven and Hartford: " A defense of sanity " at the opening of the 57th year's session of the college of medicine of the University of Vermont at Burlington; and the address before the graduating class of the school for nurses at the New York Infirmary for Women and Children. Professor Burton-Opitz is investigating the vasomotor control of the liver.

An interesting undertaking is now being carried out by the departments of physiology, pharmacology, surgery and bacteriology in conjunction. A graduate course consisting of thirty laboratory demonstrations in experimental medicine is being given by Professors Williams and Wadsworth, and Drs. Emerson and Maury. The course is intended to offer to physicians an opportunity to see demonstrated the more important and practical of the experiments of modern medical research, and thus to come into critical touch with the newer laboratory methods as applied at the bedside in both medicine and surgery.

Department of Public Law and Jurisprudence

The new duties imposed upon Professor Burgess by the consolidation of the graduate faculties have rendered necessary a slight reorganization of the divisions of constitutional and administrative law. The purely legal courses are being given by Professor Goodnow, while the historical and political aspects of government and administration are in charge of Professor Beard. An attempt is thus made to cover, as far as possible, the law and practice of government. New courses on party organization and machinery and state government are offered. The joint seminar conducted by Professors Goodnow and Beard has a large registration, and a special effort is being made to establish closer personal relations between the instructors and students engaged in graduate and research work.

Professor John Bassett Moore has returned to the United States much improved in health, and it is expected that he will be able to resume his academic duties next year. Professor Goodnow has been appointed by the government of the United States as one of its official representatives at the Congress of Administrative Sciences to be held at Brussels the coming summer.

The lectures on the George Blumenthal foundation are being delivered on Tuesday afternoons by Henry Jones Ford, professor of politics in Princeton University, who has selected as his subject "The cost of national government." The first three lectures, on The Situation, were followed by four on The Cause, while the two remaining lectures (December 14 and 21) will deal with The Cure.

The general undergraduate course in American government given in Columbia College by Professor Beard and Mr. Sait shows a large increase in registration over 1908. An effort was made to engage the interest of the students in the municipal campaign by securing them positions as non-partisan watchers and positions as party workers according to their respective affiliations.

Department of Romance Languages

The total registration in the department is larger than ever before. About 232 students are enrolled in the courses in French in Columbia College, 20 in Italian and 25 in Spanish, making a total of 277. In Barnard College, 293 are registered for French, 18 for Italian and 16 for Spanish, a total of 327. The graduate courses offered by the department have a total enrollment of 90 students, to which may be added 4 students registered for Old Irish, inasmuch as this course is given by one of the members of the Romance department. The total registration for the courses in Romance languages in Columbia University is 698, which is increased to 785 by including the registration in the extension courses.

Three new members have been added to the teaching staff since last year. To replace M. Henri Bargy, who resigned to accept the professorship of Romance languages in the Normal College, Dr. J. L. Gerig was appointed instructor in Romance languages, and Mr. A. A. Livingston tutor. Mr. Livingston was University fellow in Romance languages in 1906–07, and the following year he became head of the Italian department in Smith College. In 1909 Mr. Livingston was appointed instructor in Italian and curator of the Dante-Petrarch collection in Cornell University, resigning to accept the Columbia appointment. After having been connected with the Romance department for fourteen years, Professor Curtis Hidden Page resigned the professorship in Barnard College to accept a position as professor of English in Northwestern University. Professor Page's publications in English and Romance literature have won for him the esteem of all educators and *littérateurs*. To fill the vacancy created by the departure of Professor Page, Professor Raymond Weeks, chairman of the department of Romance languages in the University of Illinois, was elected to the chair in Barnard College. Professor Weeks is a graduate of Harvard and held for two years the traveling fellowship in Romance languages of that university. In 1895 he was appointed professor of Romance languages in the University of Missouri. Under his able direction, the Romance department of that institution became widely known. More than 25 of his former students are occupying positions in the Romance departments of many of our leading universities and colleges. In Europe, Professor Weeks is highly esteemed for his numerous publications in Romance literature and philology. Upon the death of Professor Karsten in 1908, he was called to the chairmanship of the department of Romance languages of the University of Illinois, which position he occupied until called to Columbia. M. Camille Fontaine was appointed instructor in Romance languages to fill the vacancy created by the departure of Dr. John D. Fitz-Gerald, who received a call to the University of Illinois as assistant professor of Romance languages. M. Fontaine was formerly professor of French in the High School of Commerce and is well known as an editor of texts and as a teacher.

Professor Bédier, the successor of Gaston Paris in the *Collège de France*, recently delivered a course of six lectures on "*Quelques genres lyriques aux XII^e et XIII^e siècles.*" The titles of these lectures were: 1. *Les chansons d'histoire ou "de toile"*; 2. *Les chansons de mai; les chansons de danse*; 3. *Les chansons de mal marié; l'aube*; 4. *Les pastourelles*; 5. *Les chansons de croisade*; 5. *Les "Jeux Partis."* Professor Cohn lectured on November 6 before the *Alliance Française* of Montreal, Canada, on *La France libératrice.*

Miss Alma Le Duc, a former graduate student (1907–08), was elected traveling fellow in Romance languages by the Association of Collegiate Alumnae.

FINANCIAL CONDITION AND OPERATIONS OF THE UNIVERSITY

(The figures for real estate given in the following tables are the assessed valuations on the records of the Bureau of Taxes and Assessments in the City of New York)

	Columbia University	Barnard College	Teachers College[1]	College of Pharmacy	Totals
Property owned, June 30, 1909:					
1. Occupied for educational purposes	$9,790,000.00	$2,169,843.86	$2,053,000.00	$125,000.00	$14,137,843.86
2. Held for investment	24,203,372.57	1,040,977.58	1,460,189.12	———	26,704,539.27
Total	$33,993,372.57	$3,210,821.44	$3,513,189.12	$125,000.00	$40,842,383.13
Outstanding debt	$3,464,000.00	$120,539.78	$550,699.75	$90,000.00	$4,225,239.53
Annual budget for 1909–10:					
1. For educational administration and instruction	$1,550,411.79[2]	$157,090.00	$610,064.00[3]	$29,900.00	$2,347,465.79
2. For interest on debt	128,920.00	———	24,750.00	4,700.00	158,370.00
	$1,679,331.79	$157,090.00	$634,814.00	$34,600.00	$2,505,835.79
Income for 1908–09:					
From fees of students	$615,962.96	$103,088.21	$349,953.97	$36,254.00	$1,105,259.14
From rents	491,246.33	———	———	———	491,246.33
From interest	216,804.76	46,806.14	38,142.88	———	301,753.78
From miscellaneous sources	290,152.12	6,446.86	10,863.52	1,779.43	309,241.93
Total	$1,614,166.17	$156,341.21	$398,960.37	$38,033.43	$2,207,501.18

[1] Including cost and income of the Horace Mann School for 1908–09.

[2] This includes by duplication the amount paid in salaries to officers of instruction in Barnard College, $85,500.00, and in Teachers College, $128,700.00.

[3] Including Whittier Hall.

Among those who will lecture before the University in January is the eminent Spanish jurist and historian, Rafael Altamira, professor of the history of law in the University of Oviedo. After a tour through Spanish America he comes to New York in December as a guest of the American Historical Association. During January he will lecture under the auspices of the Hispanic Society of America at various American universities. The titles of his lectures at Columbia on January 10, 12 and 14 are "What Spain has done for civilization," "The Spanish mind and character" and "Spain of today."

The Trustees

October meeting.—The clerk reported the death on June 25, 1909, of John Crosby Brown, for twenty-four years a member of the board of trustees. The President reported the death on September 14, 1909, of Charles F. McKim, director of atelier and architect of the University buildings, and on August 18, 1909, of Edward T. Boag, assistant registrar of the College of Physicians and Surgeons.

Mr. King was elected to fill the vacancy in the committee on buildings and grounds caused by the death of Mr. Brown.

The President reported that academic exercises had been suspended on Saturday, September 25, and on Tuesday afternoon, September 28, 1909, on account of the Hudson-Fulton Celebration.

Resolved, That, pursuant to the resolution adopted by the trustees on December 7, 1908, as amended January 4, 1909, providing for the nomination of six trustees, the trustees do now invite the alumni to nominate, pursuant to the terms of said resolution and in accordance therewith, an alumnus to fill the vacancy caused by the death of John Crosby Brown; the person so nominated to serve, if elected, until June 30, 1916, in accordance with the provisions of Paragraph D of said resolution.

The thanks of the Trustees were tendered: to the anonymous donor of the sum of $100,000 to be applied to the cost of the erection and equipment of Kent Hall; to H. W. Carpentier, of the class of 1848, for his gift of $112,500 to be added to the James S. Carpentier Fund for the benefit of the Law School, established in 1903; to the class of 1884 Science, for their gift of $5,000 to be used for the development of South Field; to Mrs. Charles C. Auchincloss for her generous gift of $3,000 to be applied to the building of a surgical laboratory on the roof of the College of Physicians and Surgeons; to F. Augustus Schermerhorn for his gift of $2,500 to be applied to the special maintenance fund for 1908–09; to M. Hartley Dodge for his gift of $2,500 to be applied to the special maintenance fund for 1908–09; to William K. Vanderbilt for his gift of $2,500 to be applied to the special maintenance fund for 1908–09; to the anonymous donor of the sum of $1,500 to be used toward the payment of salaries in the Medical School for the academic year 1909–10; to Mrs. Louis K. McClymonds for her generous gift to the University of $1,300 to maintain two annual scholarships in Columbia College for the academic year 1909–10; to the Germanistic Society of America for their gift to the University of the sum of $1,200 to be used for the maintenance of a lectureship on the history of German civilization for the academic year 1909–10; to Messrs. John Henry Livingston, of the class of '69, Edward de Peyster Livingston, of the class of '82, and Goodhue Livingston, of the class of '88, for their generous gift of $1,124 toward the cost of the Livingston memorial window in Livingston Hall; to the anonymous donor of $750, of which amount $200 is to be applied to meet the amount of salaries in the department of anatomy made chargeable to gifts in the budget of 1909–10, and $550 to be added to the fund for new equipment of the Medical School; to the Class of 1899, College and Science, for their additional gift of $500, to be used for the development of South Field; to Mr. Samuel P. Avery for his gift of $350 to the George William Curtis medal fund (public announcement was made at Commencement for the first time of the fact that the original endowment fund for the George William Curtis medals had been given by Mr. Avery's father, the late Samuel P. Avery); to Mr. Robert D. Wrenn for his gift to the University of $250 toward the establishment of a new fund to be known as "Equipment for Pathological Surgery;" to Messrs. Paul M. Warburg, Felix Warburg and Isaac N.

Seligman for their gift of $250 for the maintenance of the Naples zoological table; to Mr. James Loeb for his gift of $175 to be used in the purchase of books for the library; to William Fellowes Morgan, of the Class of '80, for his gift of $150 to be added to the students' loan fund; to Mr. Henry Weill, of Buffalo, N. Y., for his gift of $150 to maintain a special scholarship in Columbia College for the academic year 1909–10; to Isaac N. Seligman, of the class of '76, for his gift of $100 toward the cost of maintaining the work of the secretary's office; to the anonymous donor of the gift of $88 to meet a deficiency in the medical and surgical nursing funds for the academic year 1908–09; to the Association of the Alumni of Columbia College for their gift of $75 to be used in advertising; to the members of the class of 1884 College, for their gift of the clock and ornamental doorway for the dean's office in Hamilton Hall; to Mrs. John W. Burgess for her gift of a portrait of the late Dr. Friedrich Althoff, ministerial director of the Prussian ministry of education; to Professor Brander Matthews for his proposal to present to the University the mounted casts of the original models for the H. C. Bunner medal; to Dr. George A. Ferguson, '90 Science, for his gift of a valuable collection of shells; to Mrs. Joseph W. Harper for the portrait of their late associate, Joseph W. Harper, of the class of 1848, a trustee of the College from 1873 to 1896, painted by Eastman Johnston, and to a committee of friends for the portrait of Professor T. Mitchell Prudden, presented by them to the University.

The following appointments were made: Professor W. H. Carpenter, associate dean, to be acting dean of the faculties of political science, philosophy and pure science for the academic year 1909–10; Clark Wells Chamberlain, A.B., professor in Vassar College, to be Ernest Kempton Adams research fellow for 1909–10; Carl Runge, Ph.D., professor of applied mathematics in the University of Göttingen, to be Kaiser Wilhelm professor of German history and institutions for one year from July 1, 1909, or during the pleasure of the Trustees, with a seat in the faculties of pure science and applied science; Judah A. Joffe, A.B., to be lecturer in Russian for the academic year 1909–10; Charles H. Burnside, B.S. '98, A.M. '99, adjunct professor in the University of Wisconsin, to be associate in physics from October 1, 1909, to June 30, 1910; J. H. Shearer, B.S., Ph.D., assistant professor in Cornell University, to be associate in physics from February 1 to June 30, 1910; William Rutherford Mead to be a member of the advisory committee on art in place of Charles F. McKim, deceased; John G. Curtis, M.D., professor of physiology, to be emeritus professor of physiology; and T. Mitchell Prudden, M.D., professor of pathology, to be emeritus professor of pathology.

The following appointments were made upon the recommendation of Barnard College: Raymond Weeks, Ph.D., to be professor of the Romance languages and literatures with a seat in the faculties of Barnard College and philosophy; Louise Hoyt Gregory, Ph.D., tutor in zoology, *vice* Margaret A. Reed, resigned; Harry L. Hollingsworth, A.B., tutor in psychology, *vice* H. H. Woodrow, resigned; William Haller, A.B., assistant in English, and Cecilia M. Sillcox, A.B., assistant in chemistry, *vice* Annie L. Macleod, resigned.

The following appointments were made under Extension Teaching: A. A. Stoughton, architecture; Anna Barrows, domestic science; P. R. Cole, education; Minnie L. Bollert, English; J. L. Tynan, English; W. A. Noyes, manual arts; Margaret M. Zerbe, music; S. T. Stewart, physical education; R. E. Chaddock, political science; V. R. Greiff, electricity; F. Allen, mathematics; W. C. R. Anderson, mathematics; A. T. French, mathematics; F. R. Beygrau, commercial courses (stenography); C. F. Walker, industries and commerce of New York City; D. Earle Burchell, accounting and business methodizing, and Samuel S. Curry, English.

The following appointments were confirmed: B. O. Dodge, assistant in botany; J. Enrique Zanetti and Wm. Cabler Moore, tutor in analytical chemistry; Charles W. McKone, laboratory assistant in quantitative analysis; E. G. Thomssen, laboratory assistant in physical chemistry; L. D.

Norsworth, assistant in civil engineering; John A. Hoag, assistant in drawing; C. O. Mailloux, associate in electrical engineering; J. H. Morecroft, instructor in electrical engineering; F. W. Hehre, tutor in electrical engineering; F. L. Mason, assistant in electrical engineering; Harry M. Ayres, instructor in English; Henry H. L. Schulze, tutor in the Germanic languages and literatures; Charles C. Grove, instructor in mathematics; H. W. Reddick, tutor in mathematics; James E. Gray and Joseph S. Corbett, assistants in mathematics; Thomas McCheyne Gunn, instructor in mechanical engineering; C. W. Stone, C. E. Coolidge, G. N. Jeppson, C. H. Norton, Dudley B. Bullard, Hugh Aikman, and H. F. Stimpson, lecturers in mechanical engineering; Ralph H. Sheery, assistant in metallurgy; Daniel Gregory Mason and Frank E. Ward, associates in music; Wendell T. Bush, associate in philosophy; Walter B. Pitkin, lecturer in philosophy, *vice* Professor Fullerton, absent on leave; Max Eastman, assistant in philosophy; A. Ira Prettyman, tutor in physical education; Leighton B. Morse and Harold W. Webb, instructors in physics; Hermon W. Farwell, tutor in physics; Frank F. Almy, lecturer in physics; Walter Alfred Mitchell, Ancel St. John and Andrew W. Jackson, assistants in physics; Camille Fontaine, instructor in the Romance languages and literatures; A. Arthur Livingston, tutor in the Romance languages and literatures; Sidney Zandstra, Gustav Gottheil lecturer in semitic languages, and A. Franklin Shull, assistant in zoology; Frederic H. Bartlett, instructor in diseases of children; A. W. Pappenheimer, associate in pathology; Edwards A. Park and Hugh Auchincloss, instructors in pathology; Fred H. Albee, instructor in orthopœdic surgery.

John Dewey, professor of philosophy, was appointed to serve as the administrative head of the department of philosophy for two years from July 1, 1909, and M. I. Pupin, professor of electro-mechanics, to serve as the administrative head of the department of electrical engineering until the further order of the trustees.

Bergen Davis, Ph.D., adjunct professor of physics, was assigned to a seat in the faculty of Columbia College in the class whose terms expire June 30, 1910. Hugh Angus Stewart, M.D., adjunct professor of pathology, was assigned to a seat in the faculty of pure science.

Leave of absence for the academic year 1909–10 was granted to Professors George S. Fullerton, Leonard B. McWhood, and Charles A. Strong.

The following resignations were accepted: Ernest Fox Nichols, Sc.D., professor of experimental physics, to accept the presidency of Dartmouth College; George H. Ling, Ph.D., adjunct professor of mathematics; Curtis H. Page, Ph.D., professor of the Romance languages and literatures; Leonard B. McWhood, A.B., adjunct professor of music.

November meeting.—The President reported the death, on October 31, of John Stewart Kennedy, since 1903 a member of the board of trustees.

The board of trustees of Columbia College has received with great regret the resignation of Professor Van Amringe, dean of Columbia College and senior in point of service to any person now in the University, and directs that the following entry be made in the minutes of the trustees:

"John Howard Van Amringe was graduated from Columbia College in the class of 1860. Even before his graduation he had, at the special request of President King, undertaken some part of the special work of teaching; and immediately after receiving the degree of bachelor of arts, he was appointed a tutor in mathematics. In 1865 he was promoted to be professor of mathematics in the College; and was made one of the faculty of the newly organized School of Mines.

"For fifty years, therefore, Professor Van Amringe has served the University with unwearied diligence and zeal, and with great success as a teacher. He has proved himself a worthy successor and associate of the eminent mathematicians whose names from Robert Adrain to the present time have adorned the annals of Columbia.

"But it is not alone upon his merits as a mathematician or an instructor that the reputation of Professor Van Amringe rests. His unique distinction, and the affectionate regard of all his pupils and colleagues, have been won in the field of College administration as well as in that of teaching. For the past twenty years or more, he has been in charge,—at first unofficially and afterwards officially,—of the administrative work of Columbia College.

"His unexampled success in that field has been due in part to his long experience, in part to his clear grasp of the special problems of this College, in part to his strong sense of justice and fair play; but above all to that love for and sympathy with and understanding of the undergraduates under his charge, which have been the most distinctive and attractive features of his striking personality.

"As he has now almost attained the age of three-score and fifteen years, his desire to be relieved of the burden of his work—although still in full vigor of mind and body—must be respected by this board, which feels reluctantly compelled to grant his request; and in so doing takes this method of expressing its obligations to Professor Van Amringe for his long continued and zealous labors, and its best wishes for his health and happiness."

The President submitted his annual report which was accepted in order to be printed and distributed.

The thanks of the Trustees were tendered to the anonymous donor of $100,000 toward the cost of the construction of Kent Hall, and to the anonymous donors of sums aggregating $1,200 for various University purposes.

The President reported the following elections to the University Council: College faculty Professor Lord (1911) *vice* Professor Calkins; faculty of law Professor Kirchwey (1911) *vice* Professor Cushing, appointed acting dean; faculty of pure science Professor Kemp (1911) *vice* Professor Nichols.

The sum of $15,000 was appropriated for an increase to the permanent structure at the College of Physicians and Surgeons.

The following appointments were made: Joseph Jastrow, Ph.D., professor of psychology in the University of Wisconsin, to be lecturer in psychology for the second half of the academic year 1909–10; John Waring Parks, LL.B., lecturer in business law; Otto G. T. Kiliani, M.D., professor of clinical surgery; Jacob Kaufmann, M.D., professor of clinical medicine; Rudolf C. Denig, M.D., professor of clinical ophthalmology, and Norbert Stadtmuller, M.D., associate in clinical medicine.

UNIVERSITY COUNCIL

October meeting.—Professor Calvin Thomas was elected secretary of the Council for the academic year 1909–1910.

The election of the following delegates to the Council was recorded: From the faculty of Columbia College, Professor H. G. Lord, in place of Professor G. N. Calkins, resigned; from the faculty of law, Professor G. W. Kirchwey, in place of Professor H. A. Cushing, appointed acting dean of the faculty of law; from the faculty of medicine, Professor G. S. Huntington, in place of Professor W. B. James, resigned; from the faculty of pure science, Professor J. F. Kemp, in place of Professor E. F. Nichols, resigned.

Resolved, that Professor Charles Knapp be appointed chairman of the committee on public ceremonies, and that the remainder of the committee be constituted as follows: the secretary of the University, the chaplain of the University, the superintendent of buildings and grounds, the secretary of Teachers College.

Appointments to University fellowships and scholarships were made as follows:

Tyndall fellowship

Henry Howard Marvin, in place of
H. W. Webb, resigned
B.S. Iowa 1906

Barnard fellowship

Clement S. Brainin, reappointed.

Annual fellowship

Manuel Gamio	anthropology

President's University scholarship

Samuel Ely Eliot, in place of J. P. Harrington, resigned psychology
A.B. Washington 1905

University scholarship

Algernon Ashburner Osborne, in place of W. Haller, resigned economics
A. B. Harvard 1905

Honorary scholarship

Benjamin Pettengill Adams English
A.B. Wesleyan 1907

Special University scholarships

Heber Blankenhorn English
A.B. Wooster 1905
Edward Jones Erwin English
A.B. Davidson 1906; A.M. 1907
Jay Broadus Hubbell English
A.B. Richmond (Va.) 1905; A. M. Harvard 1908
Harvey Hatcher Hughes English
A.B. North Carolina 1907; A.M. 1909
Augustine Robert Mountsier English
A.B. Michigan 1909
A. R. Norton chemistry
A.B. Colorado 1909

Resolved, that beginning with the year 1909–10 each candidate for the degree of doctor of philosophy be required to deposit thirty copies of his dissertation with the registrar, and that the dean be requested to enforce the rule impartially.

Resolved, that authority be vested in the President of the University to make *ad interim* appointments to fellowships and scholarships for which special provision may from time to time be made.

Resolved, that the Council concur in the action of the faculty of political science in changing its rule requiring the candidate for the degree of master of arts to attend a seminar in his major subject, so as to make the rule read: "He must attend a seminar in his major subject if required so to do by the department concerned."

Resolved, that the Council concur in the action of the faculty of pure science in adding pathology to the list of subjects which may be offered under that faculty for the higher degrees.

STUDENT LIFE

Columbia students took a proper part in the **Hudson-Fulton Celebration.** In the historical pageant of September 28, Columbia was represented by a marching body of a hundred and fifty men in duck trousers and blue coats. They escorted a float entitled "Hamilton's Harangue," upon which students portrayed the scene of Alexander Hamilton's unpopular speech in defense of the Jay treaty. Saturday evening the students participated in the carnival, furnishing a large delegation in red and white dominos and manning an excellent float.

The **Cross Hammers,** a new society admitting all mining students save freshmen, held its first meeting November 3. The society is organized to cultivate the spirit and ideals of the mining profession.

The **Board of Student Representatives** has made a ruling requiring its consent to the formation of student organizations. It was thought wise to discourage the forming of more clubs and societies on the campus, since so many soon lose the active support of the students and degenerate into mere honorary institutions. The Board also ruled this fall against the sale of freshman caps by sophomores, adopting a plan whereby the caps are sold at the University Bookstore and the profits shared with the second-year class. It further required that the annual sophomore smoker be held on University property. The smoker committee, however, evaded the ruling by conducting the affair at Columbia Oval, Williamsbridge.

The opening meeting of **Kings Crown** was held in the commons on November 12, the members being treated to an address by Edwin E. Slosson, of the *Independent,* on American college problems. President Butler delivered an address of welcome and speeches were made by Dean Goetze and Professors Tombo and Beard.

ATHLETICS

Through the persistent efforts of the Board of Student Representatives, seconded by the alumni, the **General Athletic Association** has at last become a fact. The Student Board have secured nine hundred ten dollar subscriptions on the campus and the alumni have guaranteed to raise an equal amount.

Coach Rice of the **crew** has been able to hold regular practice on the Hudson during October and November. The freshmen crew has been disbanded by the direction of the Rowing Club, owing to lack of interest on the part of the class.

The **"new" South Field** has realized every hope of its sponsors as a stimulant to Columbia athletic spirit. Indeed, complaints have been heard that there is not room for all the teams who wish the use of it. Any fall afternoon one could see squads of men in foot-ball armor advancing up and down the field, tennis players hard at work on the new courts, soccer enthusiasts, lacrosse and base-ball men chasing balls here and there in practice for next spring, and track athletes faithfully plodding out their miles on the new quarter-mile cinder path. In the morning and early afternoon the field was given over to the regular physical education classes, when the freshman maneuvers with javelin and discus lent a classic atmosphere to the scene.

That **foot-ball** enthusiasm has not died out at Columbia has been shown by the interest taken in the inter-class games this fall. The scores of the various games are as follows:

Oct. 13 1912—11: 1913—6
Oct. 20 1910—13: 1912—0
Oct. 27 1911—21: 1913—0
Nov. 3 1910—22: 1913—0
Nov. 6 1911—18: 1912—0
Nov. 10 1910—23: 1911—0

Wrestling, which suffered such a lack of support last year that its discontinuance was seriously talked of, has proved one of the most popular sports this fall. Under the direction of Narganes, a former student, forty men have reported, and judging from the character of the practice, an excellent team should be turned out this winter. A **Saber-Sword-Pistol** dueling meet was held on South Field on October 22. The fall **tennis** tournament played on the new courts was a great success, the final honors falling to A. S. Moses, 1912S. The doubles contest was won by Moses and K. M. Boorman, 1910S.

DIXON R. FOX

BOOKS RECEIVED

Elementary chemistry. By Hollis Godfrey, head of the department of science, Girls' High School of Practical Arts, Boston. Longmans, Green and Company: New York.

For the Norton name. By Hollis Godfrey, author of "The man who ended war," illustrated by Thomas Fogarty. Little, Brown and Company: Boston.

Alexander Hamilton. An essay on American union. By F. S. Oliver. G. P. Putnam's Sons: New York.

Sociology, its simpler teachings and applications. By James Quayle Dealey, Ph.D., professor of social and political science at Brown University, Silver, Burdett and Company: New York, Boston, Chicago.

NECROLOGY

Edmond Kelly, A.B. 1870, A.M. and LL.B. 1877, died at his home on North Mountain, Nyack, on October 4, 1909. Mr. Kelly had obtained most of his school education in England, and he returned to Europe soon after graduation. Most of his active life was spent in the practice of the law in Paris; but, at different intervals, he lived in the United States, and made himself a factor in our American life, both at the Bar and in the activities of a good citizen. The City Club of New York is the direct outcome of his efforts to provide an agency which should be permanent for the betterment of civic conditions in New York City. This is only one of several movements for the benefit of his fellowmen which originated in his fertile and active brain.

For the last two or three years he had made his home upon a farm at Nyack, N. Y., and had thrown himself with characteristic energy into the effort to educate public opinion in the state to the point of establishing one or two labor colonies, such as have shown themselves useful in some of the European countries. His death is a distinct loss to the good citizenship of our time. As a college student, he was full of interest in everything that was going on, and could be counted upon to take part in anything that interested the student body. Although trained so largely abroad, and living so much of his life on the other side of the ocean, he never lost his interest in Columbia. His classmates who knew him best will be among those who mourn his death the most.

Edmond Kelly was known in his lifetime through his distinguished professional activity and his unselfish service as a good citizen; he will be remembered as the author of books, that have not yet received all the recognition that is their due, and that they will enjoy when the grain of American literary work of his generation has been rescued from the mountains of "best selling" chaff in which it is now lost. An intellectual modesty that seemed almost like a curious timidity, by contrast with the vigor of his ideas, forbade Mr. Kelly to claim for himself a place among the nineteenth century philosophical writers on evolution, but it will be accorded him when his work is critically estimated and placed in its relation to the achievements of other men who attained more notoriety. He had a strange shrinking from acknowledging his productions. Much of his best work appeared anonymously; the public has read and is still reading remarkable things from his pen without a suspicion of their authorship. It was with great difficulty that he was prevailed upon to "own up" to his early book on "Evolution and effort," which was acknowledged by the *Popular Science Monthly,* then completely committed to the Spencerian views of things, to be the most telling attack upon the *laissez faire* deduction from evolutionist principles that had been made in any quarter. The main ideas of that book were elaborated and clinched in the two large volumes on "Government or human evolution," and were concretely applied in a practical fashion in the unsigned book, "A workingman's program." In all of these books we find clear thinking, a wealth of information on a great variety of subjects, and a felicitous style. The principles of evolution are firmly grasped. The fact that natural selection through the struggle for existence creates inequality is presented in every light. The tendency of spontaneous social evolution to supplement natural by artificial inequality is clearly demonstrated, and then the thesis is offered and splendidly defended that justice is not, as the *laissez faire* economists and the Spencerians have contended, a rewarding of every man according to his performance, but consists in offsetting natural and artificial inequalities by great and beneficent equalities consciously created by human effort, working through the institutions of government and law. Edmond Kelly was not the only thoughtful man of his generation to arrive at this philosophy; but he was the one who set it forth with the precision of analysis and the charm of word that linger in men's minds, and so live on.

Edward Thomas Boag, for many years registrar of the College of Physicians and Surgeons, died on August 17, 1909, aged sixty-seven. He was born in South Carolina and spent his boyhood in Charleston. He was a descendant of one of the oldest Huguenot families, the Gaillards, on his mother's side, and his father was an Englishman. He went to school and college in New York City from the time he was about fourteen until his nineteenth year. Then he returned to South Carolina to join the Confederate army at the outbreak of the Civil War. He did some hard fighting under Stonewall Jackson, and was awarded the colors for gallantry on the field. In the next battle, second Fredericksburg, he was severely wounded and left on the field for dead, but being sent to Richmond in the freight-trains with hundreds of other wounded, a Southern lady who was nursing the soldiers discovered that his life was still present. His recovery was almost a miracle. He went to England after the close of the war, thinking he would settle there, but after nine months returned to this country, where he married a Virginia lady, Mary Dewees. In 1868 he became connected with the College of Physicians and Surgeons and remained in its service and the service of Columbia University for forty-one years. He had another narrow escape from death in the great blizzard of 1888, when he trudged miles through the snow to reach his home. Being retired in June, 1909, by Columbia, he enjoyed his leisure but one short month. He was in fine health and in full possession of his faculties. While spending some time at Raquette Lake in the Adirondacks, he went out in a canoe with his son-in-law. A slight movement by Mr. Boag overturned the canoe. While his companion was laboring heroically to bring him ashore, he suddenly sank, perhaps overcome by the chill of the very cold air and water.

Mr. Boag first became connected with the College of Physicians and Surgeons while I was a medical student thereat, and I have known him well and respected him highly from that time to the day on which we both retired from active service at the College, forty-one years later. Beginning duty with the title of clerk of the College, and ending with that of assistant registrar of the University, he was always a devoted and punctual officer of administration, most effective in contributing to those sound relations between the institution and its students and graduates, upon which the success of its career has largely depended. To both the older and the younger alumni of the P. & S., his valuable counsel and his daily friendly presence in the office of the College are among the most vivid recollections of their student days, and his tenacious memory enabled him to greet former students who revisited the College after years of absence in a way very welcome to the members of the long series of classes that graduated during his years of service. To very numerous practitioners of medicine throughout the United States his sudden death has given a shock of grief.—John G. Curtis.

Adler, Louis, LL.B. 1875, died at Deal, N. J., on September 8, 1909, aged 56 years.

Bach, Albert, LL.B. 1875, died on August 1, 1909.

Bell, William Adie, M.D. 1887, died in Yonkers, N. Y., on November 15, 1909.

Cadmus, Josiah, M.D. 1848, died in New York City on October 28, 1909 aged 91 years.

Cameron, Rev. Lewis, Ph.B. 1887 (Pol. Sc.), died in South Orange, N. J., on October 30, 1909, aged 45 years.

Coffin, Ralston Roberts, class of 1904 College, died in New York City on September 5, 1909, aged 27 years.

Dodd, William Joseph, class of '66 Medicine, died in Jersey City, N. J., on October 20, 1909, aged 80 years.

Eastman, Barnard Douglass, M.D. 1862, died in Topeka, Kansas, on September 11, 1909, aged 73 years.

Fisher, William Hubbel, LL.B. 1867, died at Cincinnati, Ohio, on October 6, 1909.

Gilder, Richard Watson, Litt.D. 1907, editor of the Century Magazine since its foundation, died in New York City on November 18, 1909.

Grant, Gabriel, M.D. 1850, died in

New York City on November 8, 1909, aged 83 years.

Harris, George Robert, M.D. 1885, died in Norwich, Conn., on November 3, 1909, aged 44 years.

Hogan, Edward G., M.D. 1867, died in New York City on November 7, 1909, aged 72 years.

Hoyt, Nathaniel S., class of 1908 College, died in Lakewood, N. J., on July 21, 1909, aged 22 years.

Kahn, Samuel S., M.D. 1877, died in San Francisco, Cal., in October.

Kennedy, John Stewart, trustee of Columbia University 1903–1909, died in New York City on October 31, 1909, aged 79 years. Mr. Kennedy was born at Blantyre, Scotland, on January 4, 1830, and came to New York in 1850. He organized the banking firm of J. S. Kennedy & Co., from which he retired as an active partner in 1883. He was closely associated for years with James J. Hill in northwestern railroad development, and was a director of many railroads and large business corporations. Mr. Kennedy was president of the Presbyterian Hospital for nearly twenty-six years, and it was through his munificence that the United Charities Building was erected in 1891. The College faculty and the student body were represented at Mr. Kennedy's funeral. See p. 64.

Kissam, Edward Hallock, LL.B. 1879, died in Brooklyn, N. Y. C., on November 5, 1909, aged 51 years.

Lawrence, George Anderson, A.B. 1862, A.M. 1865, died at DeLand, Florida, on June 27, 1909.

Luze, Philip S. de, class of '91 College, died at New Rochelle, N. Y., on June 11, 1909.

McEwen, Daniel Church, class of '67 Law, died in Brooklyn, N. Y. C., on November 1, 1909, aged 67 years.

McKim, Charles Follen, Litt.D. 1904, died on September 14, 1909. See p. 67.

Martin, Benjamin Ellis, M.D. 1861, died in New York City on August 15, 1909, aged 70 years.

O'Donnell, John Robert, class of 1881 Law, died in New York City on October 5, 1909, aged 56 years.

Schenck, John Cornell, LL.B. 1860, died in New York City on September 29, 1909, aged 72 years.

Smith, Wybrants Alonzo, A.B. 1873, LL.B. 1876, died in Brooklyn, N. Y. C., on October 18, 1909, aged 58 years.

Stevens, Grenville Smith, M.D. 1854, died at Edgewood, R. I., on September 16, 1909, aged 81 years.

VanWinkle, Rev. Edward H., A.B. 1865, died in New York City on August 30, 1909, aged 67 years.

Whitney, Albert Beach, A.B. 1861, died in New York City on August 30, 1909, aged 72 years.

Wise, J. Parker, LL.B. 1905, died recently at Metuchen, N. J.

Wormser, Maurice S., A. B. 1885, died in New York City on October 1, 1909, aged 43 years.

STATISTICS

The enrollment as of November 7, 1909, is the largest in the University's history, showing an increase in two years of 550 winter students and of almost one thousand students in the grand total. The greatest gains over last year have been made by Barnard College, the non-professional graduate faculties, and Teachers College, while the 1909 summer session registered an increase of no less than 432 students over that of 1908. The gain in the grand total over 1908 is one of eight per cent., over 1900 one of no less than seventy-two per cent. The entering classes both in the College and the engineering schools exhibit an increase over last year.

W. A. H.

STATISTICS

MAJOR AND MINOR SUBJECTS OF STUDENTS IN THE FACULTIES OF POLITICAL SCIENCE, PHILOSOPHY, AND PURE SCIENCE, 1908–09

SUBJECTS	Political Science		Philosophy		Pure Science		Total	
	Major	Minor	Major	Minor	Major	Minor	Major	Minor
Administrative Law	15	13	...	...	...	1	15	14
American History	35	14	...	6	...	...	35	20
Anatomy	...	...	...	...	6	...	6	...
Ancient History	3	2	...	3	...	...	3	5
Anthropology	...	4	1	1	...	...	1	5
Astronomy	...	...	...	...	...	7	...	7
Bacteriology	...	...	...	...	1	4	1	4
Biological Chemistry	...	...	...	...	5	8	5	8
Botany	...	...	...	2	15	7	15	9
Chemistry	...	...	...	4	34	28	34	32
Chinese Lang. and Lit.	...	1	3	...	...	...	3	1
Civil Engineering	...	...	...	...	3	2	3	2
Classical Archæology	...	...	4	...	...	...	4	...
Comparative Literature	...	3	9	...	...	..	9	3
Constitutional Law	16	16	...	1	...	...	16	17
Education	...	8	171	166	...	18	171	192
Electrical Engineering	...	..	...	...	1	4	1	4
Embryology	...	...	...	...	...	1	...	1
English	...	6	103	70	...	2	103	78
Geography	...	...	...	...	...	1	...	1
Geology	...	...	...	1	16	20	16	21
Germanic Lang. and Lit.	...	..	47	41	...	...	47	41
Greek (incl. Archæology)	...	...	7	12	...	.	7	12
Histology	...	...	.	...	..	1	...	1
Indo-Iranian Languages	...	...	1	...	...	...	1	...
International Law	6	12	...	...	...	...	6	12
Latin (incl. Roman Arch.)	...	1	46	20	...	...	46	21
Linguistics	...	..	...	1	...	...	...	1
Mathematical Physics	...	...	...	...	4	14	4	14
Mathematics	...	...	...	11	34	10	34	21
Mechanical Engineering	...	...	...	...	3	2	3	2
Mediæval History	9	12	...	1	...	.	9	13
Metallurgy	...	...	...	1	5	3	5	4
Mineralogy	...	...	...	...	1	4	1	4
Mining	...	...	...	...	...	5	...	5
Modern European History	8	19	...	9	..		8	28
Music	...	...	..	...	...	1	...	1
Pathology	...	...	...	...	1	...	1	...
Philosophy (incl. Ethics)	...	15	44	43	..	...	44	58
Physics	...	...	...	1	23	15	23	16
Physiology	...	...	...	1	1	2	1	3
Political Economy	40	38	...	3	...	1	40	42
Political Philosophy	4	11	...	1	...	..	4	12
Psychology	...	3	11	22	...	2	11	27
Roman Law and Comp. Jurisprudence	8	25	...	...	...	...	8	25
Romance Lang. and Lit. (incl. Celtic)	...	...	27	24	...	1	27	25
Semitic Languages	...	2	9	5	...	...	9	7
Social Economy	27	12	...	5	...	...	27	17
Sociology and Statistics	66	37	...	32	...	1	66	70
Zoology	...	...		3	18	11	18	14
Total	237	254	483	400	171	176	891	920

STATISTICS

NOVEMBER 7

Students registered in:	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909
Columbia College	464	481	485	493	527	557	606	609	645	632
Freshmen	124	141	157	119	145	157	160	133	171	195
Sophomores	95	102	85	111	113	130	156	168	135	172
Juniors	99	98	128	112	117	112	128	141	151	108
Seniors	88	94	70	110	106	113	111	111	120	109
Non-matriculated	58	46	45	41	46	45	51	56	68	48
Barnard College	292	328	345	399	363	371	398	420	467	513
Freshmen	82	99	92	101	110	103	112	122	139	176
Sophomores	51	73	79	74	75	95	89	92	113	110
Juniors	39	48	73	81	70	77	109	115	108	121
Seniors	52	50	49	77	83	81	64	58	66	61
Non-matriculated	68	58	52	66	25	15	24	33	41	45
Total undergraduates	756	809	830	892	890	928	1004	1029	1112	1145
Faculty of Political Science	109	142	150	143	148	174	177	210	239	251
Faculty of Philosophy	239	280	317	382	392	490	492	532	556	573
Faculty of Pure Science	64	54	57	95	160	140	139	155	158	167
Auditors	20	18	23	17	9	—	—	—	—	—
Total non-professional graduate students	432	494	547	637	709	804	808	897	953	991
Schools of Mines, Engin'g and Chem.	546	604	685	719	589	566	524	585	677	666
First-year	153	193	222	177	156	140	137	186	211	220
Second-year	132	156	184	226	164	198	158	189	237	212
Third-year	123	127	149	146	156	112	118	123	125	146
Fourth-year	99	91	87	104	85	94	87	64	85	68
Non-matriculated	33	31	38	53	28	22	24	23	19	20
Graduates	6	6	5	13	*	*	*	*	*	*
Fine Arts					109	139	112	147	156	153
Architecture	†	†	†	†	74	107	87	123	131	128
Music	‡	‡	‡	‡	35	32	25	24	25	25
Law School	427	443	468	384	342	277	261	247	318	318
First-year	172	165	182	104	106	70	92	85	112	100
Second-year	151	150	135	149	98	107	69	83	102	113
Third-year	100	126	129	119	127	92	85	59	76	92
Non-matriculated	4	2	22	12	11	8	15	20	28	13
Medical School	751	815	777	669	560	424	352	298	306	307
First-year	245	269	203	107	97	79	86	60	84	85
Second-year	190	199	205	164	106	83	80	67	59	72
Third-year	148	179	181	101	156	100	79	76	72	68
Fourth-year	147	148	171	178	190	152	96	80	82	70
Non-matriculated	21	20	17	29	11	10	11	15	9	12
College of Pharmacy					435	353	254	229	284	290
First-year					261	97	107	120	163	156
Second-year					157	232	106	90	112	123
Graduates					17	24	41	2	5	7
Non-matriculated					—	—	—	17	4	4
Teachers College	448	557	563	624	640	792	726	891	950	974
First-year	24	17	43	29	29	24	—	—	—	—
Second-year	30	28	21	46	44	51	43	—	—	—
Third-year	93	141	155	201	237	308	273	314	353	373
Fourth-year	76	79	145	174	195	236	239	314	309	314
Non-matriculated	40	19	54	40	23	32	22	40	72	93
Graduates	127	162	83	95	99	141	149	182	216	194
Auditors and unclassified students	58	111	62	39	13	—	—	—	—	—
Total professional students	2172	2419	2493	2396	2675	2551	2229	2356	2691	2708
Double registration ‖	105	136	120	189	218	266	155	182	216	194
Net total resident students	3255	3586	3750	3736	4056	4017	3886	4100	4540	4650
Summer Session	417	579	643	1001	961	1018	1041	1392	1532	1968
Double registration §	108	86	91	180	184	280	277	336	395	486
Grand total regular students	3564	4079	4302	4557	4833	4755	4650	5156	5677	6132
Students in extension courses	721	420	535	732	684	964	1017	3055	2879	2250
Officers	440	449	473	509	551	573	571	646	655	687

In addition to the above there are this year 990 pupils in the Horace Mann School and 223 in the Speyer School.

* Graduate students in applied science are now registered under the faculty of pure science.

† Students in architecture are included under mines, engineering and chemistry previous to 1904.

‡ Students in music are included under Barnard College (non-matriculated) previous to 1904.

‖ Includes candidates for University and Teachers College degrees.

§ Includes Summer Session students who returned for work in the fall.

FREDERICK A. P. BARNARD

PRESIDENT OF COLUMBIA COLLEGE, 1864–1889